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ABSTRACT

The objectives of this research were: (a) to identify the content and configuration of critical activity structures and routines in well-functioning classrooms; (b) to trace the origins of routines during the first four days of school; and (c) to identify the mechanisms used by expert teachers to teach students the content, the cues, and the circumstances under which activity structures and routines are used. Six expert elementary school mathematics teachers were identified. Observational logs, videotapes, audiotapes, and interviews with teachers and students were collected and analyzed. A matrix mapping the relationship between routines and activity structures was developed, teachers' actions during the introduction of routines in the first four days were described, and the attachments linking the teacher's actions to the routine were identified and coded as management, support, or exchange. Major findings summarized include: when routines occur, how many are introduced at the beginning of the year, and how many of these exist in the middle of the year for each teacher. The three types of routines are then reviewed with some specific examples, and students' explicit knowledge of a sample of routines is examined. A lengthy appendix contains a description of each teacher's actions during the first four days. (MNS)

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Introduction and Integration of Classroom Routines by Expert Teachers

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Introduction and Integration of Classroom Routines by Expert Teachers

Objectives

The purpose of this research was to learn how successful teachers establish routines in their classrooms at the beginning of the year and maintain them throughout the year. The presence of functioning activity structures and efficient supporting routines is one benchmark of a successful mathematics teacher (Leinhardt, 1983). Activity structures are goal directed segments of teacher and student behavior that cast teachers and students in particular actions, for example, lesson presentation or boardwork. Routines are small cooperative scripts of behavior, used to support several activity structures, for example, choral response, or paper passing out. These structures and their supporting routines permit instruction to take place in a focused, predictable, and fluid way. Activity structures help to pattern and make predictable the normal flow of a lesson. Routines free up cognitive processing space for both teachers and students by making automatic a subset of the cognitive processing tasks that would confront teachers and students if the problems for which these are solutions had to be solved anew each time. For routines to become established they must be taught and rehearsed. The objective of this research is (a) to identify the content and configuration of critical activity structures and routines in well functioning classrooms; (b) to trace the origins of routines during the first four days of school; and (c) to identify the mechanisms used by expert teachers to teach students both the content, the cues, and the circumstances under which activity structures and routines are used.

Theoretical Background

The research reported here draws on two distinct bodies of literature: (a) beginning school studies from the process product, educational anthropology, and planning traditions as well as educational sociology (Ball, 1980; Berliner, King, Rubin, & Fisher, 1981; Bossert, 1978; Buckley & Cooper, 1978; Clark & Elmore, 1979; Emmer, Evertson, & Anderson, 1980; Pittman, 1983; Tikunoff & Ward, 1978); and (b) plans, routines, and scripts research from cognitive psychology

(Hayes Roth & Hayes Roth, 1978; Sacerdoti, 1977; Schank & Abelson, 1977; Stefik, 1980).

Studies of the beginning of the school year have noted the significance of the first few days in establishing rules and norms and in setting the tone for the year (Buckley & Cooper, 1978; Emmer, Evertson. & Anderson, 1980; Cornbleth, Korth & Dorow, 1983; Pittman, 1983). The research in education has emphasized the development of rules and management routines in the context of contrasting successful and unsuccessful managers. In the current study we examine the behavior of expert teachers during the first few days of school and at midyear. Experts were identified by their students' unusual academic successes. Further, we discuss the establishment of routines and patterns of behavior as a way of helping to reduce the cognitive demands for both students and teachers when content information is to be transmitted.

Much of the prior research has dealt with how rules of governance are established. It is important to distinguish between rules and routines. Some rules are also routines. However, most rules are statements of what is not permitted or are explicit or implicit constraints. Routines, on the other hand, are fluid, paired, scripted segments of behavior that help movement toward a shared goal. Routines can have explicit descriptors, can be modeled or, more commonly, can simply evolve through a shared exchange of cues.

Plans can be considered ways of systematically ordering action strings, each of which calls up a familiar knowledge schema that enables the action to take place (Hayes-Roth & Hayes-Roth, 1978). In a socially dynamic setting, planning must incorporate estimates of what the other members of the group will do. Planning in this context is further facilitated if the execution can draw upon shared action schemata. The instruction to "pass your papers in" results in all actors understanding the expected actions and in executing them. There are two key ways in which this can be accomplished--the expected action can be described, rehearsed and drilled or it can be modeled and rehearsed. Both techniques are used, as we will see, by experts.

In cognitive psychology, the work on planning shows how one can move through a sequence of actions and decisions efficiently. Thus, one can build a skeletal sequence of actions that has embedded in it the schemata for collecting information, storing it, and then using it in a different (later) location in the sequence (Hayes-Roth & Hayes-Roth, 1978; Sacerdoti 1977; Stefik 1980). In order to do this not only must the teacher have action and content schemata (Leinhardt, 1983) but the teacher/student team must have a set of established routines for information collection, storage, and retrieval.

In studying how expert teachers go about establishing effective routines we have found it useful to break apart the math lesson into repeatable goal directed segments that are very similar to what Bossert (1978) calls activity structures. An activity structure perspective allowed us to examine the recurrent activities within a given lesson as they were shaped by the teacher and students. Berliner et al. (1981) specified the features which defined a number of common activity structures and which increased student opportunity to learn.

There now exists a substantial number of studies that directly address the issues of how teachers establish themselves with their students in the first few days or weeks of school (Ball, 1980; Buckley & Cooper, 1978; Clark & Elmore, 1979; Cornbleth, Korth, & Dorow, 1983; Edelsky, Draper & Smith, 1983; Emmer, Evertson & Anderson, 1980; Evertson & Anderson, 1980; Pittman, 1983; Sanford & Evertson, 1980; Tikunoff & Ward, 1978; McDermott, 1977). The studies fall into two basic categories--those that address the issues of management and control, growing quite directly from process product research, and those that grow out of the ethnography of human relations and negotiations. For the most part, the studies focus on management of

students or rules for conduct.[1]

We assume that students have a well developed school schema in place by fourth grade. Second graders have a school schema to a lesser extent. This schema is much more than a rule list. It anticipates the information that will come from other students, the teachers, parents, principal, lunch aide, etc. in the first few days of school. If no information is forthcoming, the student puts information in from previous experience, including the information of how to interpret no information. Thus, the students' lack of power does not leave them actionless. As Ball (1980), examining this from an anthropological perspective says,

> "a great deal of information relevant to the classroom, both for the pupils and the teacher,is actually gleaned from face-to-face contacts. In practice, for the pupils, this involves such things as the level of noise the teacher will tolerate; the method that they are allowed to use in addressing him or her or attracting his or her attention; the amount of work demanded of them and the level of risk involved in this; the acceptable form of presentation of work and numerous other features of the teacher's organization and management of the classroom. Indeed a teacher will begin to give out cues and information to the pupils the moment he or she walks into the classroom --by style of speech, accent and tone of voice, gestures and facial expression, whether he or she sits behind the desk at the front or walks up and down and talks to pupils privately." p. 145

In studying the development of classroom routines, we are more interested in the system of exchanges that are set up in order for instruction to take place than in the system of rules to

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[1]There is considerable diversity in methodology from retrospective interviews conducted seven weeks after school starts (Clark & Elmore, 1979) to daily observational logs collected for the entire school day (Tikunoff & Ward, 1978; Buckley & Cooper, 1978). It seems fairly clear that in order to get a good picture of the emergence of the educational dance of school, interviews and observations must be conducted before and during the first few days of school. A consistent finding is that for good teachers, the regulation system is in place very, very quickly (Edelsky, Draper & Smith, 1983; Pittman, 1983; Emmer, Evertson & Anderson, 1979). This is true whether the research is addressing the issue of teacher as manager (Emmer, Evertson & Anderson, 1980) or teacher as negotiator (Cornbleth, Korth & Dorow, 1983), or teacher as rule establisher (Tikunoff & Ward, 1978; Buckley & Cooper, 1978). In some contrast to the Buckley & Cooper findings that teachers determine all the rules, several researchers find considerable negotiation which influences the way a classroom emerges (see especially Ball, 1980; Cornbleth, Korth & Dorow, 1983; Pittman, 1983; and Edelsky, Draper & Smith, 1983; McDermott, 1973). Perhaps it is really a matter of semantics as there is no question of where the power is in the system, just some question as to its use. We consider that the effective teacher at the beginning of the year has a objective of setting up an efficient and smoothly running classroom where instruction, not management, is the major thrust. The first few days involve explicit statements of the teacher's expectations (Buckley & Cooper, 1978; Clark & Elmore, 1979; Emmer, Evertson, & Anderson, 1980; Evertson & Anderson, 1979) and rehearsals of the routines. As these expectations and routines become internalized, the teacher can call up these routines with minimal cues to the students. By mapping the routines as they are explicitedly stated at the beginning of the year onto the midyear version, we can specify how these routines serve to reduce the processing load carried by teacher and student.

limit behavior, although rules may be used to help establish routines. Because the precise analytic framework for studies of teachers that go beyond a list of their action types has not been developed fully, the field still searches for a metaphor--teacher as decision maker, problem solver, executive, etc. The metaphor helps both reader and author fill in the empty pieces of conceptualization. For this particular study we use the notion of teacher as choreographer or director. Verbal and movement behaviors must be assembled so they can be danced out. Selecting the steps to be combined and rehearsing them becomes a task of the teacher with the participation of the students.

A Perspective

Teachers who function well have agendas (Leinhardt, 1983; Leinhardt & Greeno, in preparation). Agendas consist of the day's working plan. They contain major segments that can be modeled. An agenda is not the lesson plan; but it contains the topic of the lesson and all of the goals and supporting actions that permit a teacher to execute a segment of instruction. Elsewhere we have described in some depth the content of these plans (Leinhardt, 1983; Leinhardt & Greeno, in preparation). For the purposes of this study, segments of the agenda can be represented as planning nets (Greeno, et al. 1983). Planning nets have nodes and links. The nodes can be either goals or actions. Actions represent bundles of knowledge that can have pre-, post- and co-requisite states (goals) attached. In examining a planning net for a lesson segment, we can see the function of a routine.

Routines can be thought of as pieces of socially scripted behavior or they can be shown in their role as supporting actions for achieving some goal. In analyzing some of the activity segments of expert teachers, we focused on the lesson presentation portion of a lesson. Lesson presentation integrates three to six procedures, each of which has its own planning net. For example, one of the first goals in a lesson in which an algorithm is presented is to define the terms. In Figure 1 this goal is shown as the consequence of two actions: the teacher stating the definitions or the

student(s) stating them. The effect of having the teacher state the definitions is that the lesson moves along quickly. The effect of having the student(s) state the definitions is that student interest is maintained. However, in order for the teacher to get the student to respond, the teacher relinquishes control of a portion of the lesson, as shown in Figure 1. The routines are used in this case to call for student responses.

Insert Figure 1 here

Another goal which follows the presentation of the algorithm is to get the algorithm learned (see Figure 2). When the algorithm is being learned, there is generally some public restatement of it by one or more of the following actions: Students solve problems at the board, students chorally state the problem and answer it, students chorally recite the rule, a series of individuals work out examples publicly, or the teacher repeats the demonstration. Board work is itself a routine that is composed of several smaller routines: getting out of the seat, walking to the board, finding chalk, finding an eraser, selecting a space, listening for directions, and acting. For older children, only board placement and directions are usually made explicit. For second graders, getting out of the chair and finding a place and a piece of chalk also need to be made explicit.

Insert Figure 2 here

During a lesson, teachers are often in a position in which they have to surrender control of the execution of a portion of a plan. Whenever a teacher calls on a student s/he runs the risk that the student's verbal productions or actions may not produce exactly what is needed. The probability of achieving the goal is reduced by some amount. The student's potential action is linked to a goal in the teachers' plan by some causal knowledge or belief. One might ask why the

teacher gives up this control. College teachers don't. The answer lies with another goal--that of keeping students active and interested.

Assuming that the teacher wants to be as certain as possible that the expected action occurs, s/he teaches in advance the universal elements of exchange and the system that indicates receipt of the message has been received. There are many situations in which communication and subsequent action are important, but in which the surrounding circumstances tend to interfere with clear communication. This interference requires the installation of devices that insure complete communication. In schools, this lays the groundwork for a unique "contract of communication" for the classroom. (See Rommetveit, 1968, 1972, for more elaborate and general discussion.)[2]

Methods and Data Source

Six expert mathematics teachers were identified by examining student achievement growth scores over a five year period. These teachers' growth scores were consistently in the top 20% of the districts' distribution.[3]

The teachers taught in the following grades: three teachers in fourth, one teacher in fourth and fifth, one teacher in second, and one teacher in first. All of the teachers taught in self-contained

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[2]In scuba diving in order to communicate underwater, there are a small series of signals, for which the patterns of response are either totally fixed or binary. The communications always require a response to indicate registering; that is, one cannot assume the message has been received. (Note that we do this in speech, but don't always wait for the response.) There are two types of signals--static or dynamic. Static signals require static responses. Dynamic signals require the receiver to immediately take over all decision making until the episode has ended; and similarly the sender, after sending the signal, agrees to become passive with respect to action and decisions (e.g., out of air). Similar signaling occurs in mountain climbing, ship commands, etc. In critical circumstances requiring increased certainty, the actions get tags that increase the chance that the event will take place--those wonderful Hollywood sea battle movies with a statement and restatement: up scope, up scope, right full rudder, right full rudder, etc., are of the same type. In this paper, we are exploring in considerable detail the precise nature of the communication routines used in elementary mathematics classrooms and tracing how they are established in the beginning of school.

[3]In this context, expertise is based on the assessment of the product of the teacher's behaviors. However, expertise is not unidimensional and, in fact, all of our teachers showed skills and weaknesses in varying degrees in varying circumstances. The notion is that instruction is a domain of compensating factors. While failure in some areas does produce class failure, weakness in one area (subject matter knowledge, for example) can be compensated for in others--lesson presentation skill, for example. In our case, most of the teachers were outstanding managers, but at least two were not; these two, however, had unusual command of the subject matter.

classrooms (including one open classroom), and two taught math to a second class. Median class size was 28. The classrooms all served middle to lower middle class families. One was all white; two were all black; and four were integrated. The classrooms were distributed across five schools.

The following types of data were collected for each teacher: observational logs, four of which covered the beginning school days; an average of eight math class videotapes with corresponding stimulated recalls; audiotapes of classes on different days; and extensive interviews on the teacher's class planning, math subject matter knowledge, perceptions of students, and general educational orientation. And finally, in three classrooms, we were able to interview a total of 27 students on their in-class subject matter thoughts and their perceptions of classroom structure. Data were collected over two academic years: midyear of year one, the first four days of year two, and midyear of year two. The audiotapes of observations, interviews, and stimulated recalls were transcribed. The transcribed data and videotapes were analyzed to identify the activity structures and supporting routines that were used in each lesson. Tables 1 and 2 summarize the data available for each of the six teachers. Table 1 displays the times and years during which data were collected. Table 2 shows the types and quantity of data available.

Insert Table 1 and Table 2 here

A matrix mapping the relationship between routines and activity structures was developed, both for individual teachers and across the sample of teachers. We were then able to identify the introduction of the routines in the first four days and describe the actions of each teacher as the routines were established. The final step was to find the attachments linking the teacher's actions to the routine. These linkages occurred as explicit directions, cues, reinforcers, the use of a child as a model, or as emergent repetitions.

We categorized each linkage as conveying either the procedure for doing a routine, the goal or purpose of a routine, or both. If a teacher explained or taught how to do something, it was considered procedural (for example, "pass papers to the person in front, then pass center, I will collect"; or, "when you are finished, turn your paper over. fold your hands and look up"). If a teacher gave the objective, but not procedure, it was considered goal based (for example, "let me know when you're finished and then keep busy"). In some cases, the teacher gave both the procedure and the goal.[4] Each routine was coded as management, support or exchange.[5] Inter-observer agreement on the identification and categorizing of routines was about 95%.

Management routines can be thought of as housekeeping, discipline, maintenance, and people-moving tasks; for example, hanging up coats, never interrupting, lining up (to change classes or go to the bathroom). Management routines provide a classroom superstructure within which the social environment and behaviors are clearly defined and well known. Failure of management routines results in a sense of disorder or lack of discipline. Typically, "open" classrooms have fewer of these routines routinized than do other classrooms.

Support routines define and specify the behaviors and actions necessary for a learning-teaching exchange to take place. They are set-ups for a learning-teaching exchange. Examples are distribution and collection of papers; getting materials ready (books, pencils, crayons); specifying

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[4]We were primarily interested in analyzing the routines used in a functioning mathematics class, therefore, our method of establishing the specific time and activity structure when routines were presented becomes important. During the first four days we observed all of the teachers for an entire day. During the day, there are many routines that may be used or introduced in non-math classes and that are later used in the math class itself (such as pencil sharpening). We observed, however, some routines that are not used in math class (hanging up coats, for example) and these were not counted.

[5]The system used to identify routines present at the beginning of school and at midyear consisted of three major phases. The first phase (coding) was the coding of routines that occurred in the first four days. In this stage, researchers read the observational logs of each teacher in the first four days. Routines and rules as well as activity structures were noted in the margin and then mapped onto a matrix developed for coding routines across activity structures. The observational logs were read a second time and the method for introducing each routine was added to the matrix. In the second phase (sorting), routines were sorted by type—management, support, and exchange. The routine was then sorted by its main function. Two researchers sorted these routines. One chose the type while the other either agreed or disagreed. The assignment was made by consensus. In the third phase (checking), videotapes or transcripts were watched to see if coded routines from the beginning of school were observable in midyear. A checklist was compiled on which the researcher noted whether or not the routine was present on any of the days that were videotaped, or in transcribed notes.

where an action is to occur (at the board, at student's seat, at teacher's desk); locating pages and lines in texts. Failure in these routines leads to a sense that the teacher is not "with it" or well prepared, or that students are having (or giving) a hard time. Failure also produces time problems.

Exchange routines specify the interactive behaviors that permit the teaching-learning exchange to occur. They are largely language contacts between teachers and students. More specifically, the preferred types of communication between students and teacher are modeled or defined and are often activity-structure specific. Examples are: choral exchanges, teacher travels and checks student's work, and teacher calls on series of individual students until she gets the correct answer. Failure in these routines leads to the appearance that teachers are talking to themselves, with students not listening or at least not responding or vice versa. To use our metaphor for teaching--the first type of routine gives broad stage directions; the second, the steps to the dance; and the third, the lyrics to the song.

In the next section, we summarize the major findings: when routines occur, how many of them are introduced at the beginning of the year, and how many of these exist in the middle of the year for each teacher. We then turn to a review of the three types of routines--management, support and exchange--with some specific examples. Finally, we examine the students' explicit knowledge of a sample of routines.

Results

Teachers

All six teachers spent considerable time in the first day explaining procedures from such large movements as lining up to such finely detailed tasks as ruling paper. They also spent a considerable amount of time setting expectations for content based success. Approximately one-third of the routines that were developed during the first two days and later used were not described but were modeled--this was especially true for the response modes such as raising

hands, cycling through students until the correct answer was found, and choral responses. Results from these are discussed in the following way: the set of activities and routines; the method of introduction; the non-overlapping set (those introduced and not used, those used but not introduced, the analysis of which is forthcoming); and the dysfunctional patterns introduced and maintained.

Patrick. Ms. Patrick taught in a school which was 100% black. The school had shown unusually high levels of achievement for students over the last several years and the faculty was proud of its reputation. It was a traditional school, using a rigid tracking system and some very strict school-wide policies. Ms. Patrick had been educated in parochial schools and had taught exclusively in this school, including her student teaching time. She had maintained strong ties to her cooperating teacher from the time when she was a student teacher through the twenty plus years she had been at the school. The two teachers teamed together so that each teacher taught one class for the other. As a result, Ms. Patrick had been teaching both second and third grade math for many years.

Ms. Patrick's class had a very clear cut structure. The structure was designed to control a lot of the potentially disruptive behaviors in the classroom by carefully proceduralizing many actions. For example, in the crowded and poor setting of school, fights easily erupted from casual jostling or lost pencils. Ms. Patrick short-circuited this by teaching movement strategies. Ms. Patrick built into the overall class structure multiple opportunities for the children to talk about themselves and to have "fun" (such as games, poems, singing). She also planned activities that broke up the day for the children in second grade.

The first day of school left one with the clear sense of planfulness although subject matter content was minimal. Essentially, the content of instruction was the procedures for instruction. Ms. Patrick taught her children to move from their seats to different parts of the room and to get

in and out of their desks in a way that minimized collision. She also taught them the most necessary exchange routines: how to get her attention and how to respond. She kept a tight reign on "stray" verbalization. By day two, class movement became more elaborate with rehearsal of row dismissals, standing and sitting for differing cues (stand when done, sit if answer wrong in game, etc.), and line-up. However, day two also brought in the elaborated exchanges of showing and copying, taking turns with teacher, taking turns with child and child/child tag for problem responses. Day three continued with rehearsals and maintenance of all the prior routines and increasing the movement ones with the addition of carpet squares. Carpet squares let children define a "spot" when sitting close to each other on the floor. Cycle to correct was introduced as an exchange routine for answers to questions about scheduling, as was signal when done. Drill games were also introduced on day three during full-time content-based lessons. Day four saw a shortening of the cues for routine initiations and in one case, a too brief request (row one, pencils; row two, coats) which left the children bewildered; but Ms. Patrick quickly linked the cue to the longer explanations. The week ended with some rough spots in performance remaining, but with the bulk of the operating structures in place.

As Table 3 summarizes, during the first four days of school, Ms. Patrick introduced 48 routines, which were embedded in 10 activity structures. Of these 48 routines, 41 (85%) appeared again in midyear. The six most important routines (hand raising [e], individual exchange [e], choral response [e], take out/put away [s], travel check [e], no talk/I talk [m]) occurred over 4-6 activity structures and occurred in all four days, as well as in midyear. Of these important routines four were exchange (e), one was support (s) and one was management (m). Of the 15 management routines, 47% were introduced on day one and 6% on the fourth day; 67% were present in midyear. Of the 16 support routines, 44% were introduced on day one while 6% were introduced on the fourth day; 94% were present in midyear. Of the 17 exchange routines, 35% were introduced on day one while 12% were introduced on the fourth day, 94% were present in

midyear. In general, the bulk of all of the routines were introduced on the first day and far fewer on the fourth day. Exchange routines were brought in slightly more slowly across the days than the were management ones.

Insert Table 3 here

Wall. Ms. Wall taught in an integrated school that had exceptionally high achievement levels for its students compared to other schools in the city. She was viewed by the other teachers in the school as a strong, competent teacher and her nomination as an expert teacher was supported by many including the principal. Ms. Wall ran a very teacher-controlled classroom. She had many procedures governing much of the children's behaviors and these routines were consistently enforced throughout the year. Ms. Wall had attended very strict parochial schools and then a community-controlled public high school. She had taught briefly in parochial schools before coming to her current school where she had been teaching for ten years.

Ms. Wall used the first day to introduce not only school and personal rules (both covered extensively), but her own style of establishing dominance with boldness and humorous threats. The majority of the 13 exchange routines (77%) were introduced on the first day with around half of the management and support routines introduced. The day included content presentation and the distribution and collection of work as well as the routines needed for playing a team-based game for speed in math. Day two consisted, as it did for Ms. Patrick, of refining the routines for work, setting up papers, and using individual call-ons to both check on real understanding and to embarrass non-attenders. Ms. Wall also increased the pace, covering six papers of math review in one lesson. By day three, Ms. Wall used the routines she established in the first two days and the class functioned efficiently. Subtleties such as cycle to correct and mixing response routines were introduced. She maintained the fast pace and increased the

quantity of written work. The necessary routines of headings, hand-ins, and desk clearing were elaborated. By day four, the class proceeded almost like it did at midyear. Routines for paper exchange and correction were introduced for the first time, but little explanation was needed for how they should be done. Objectives were stated with the expectation that procedures for them existed or could be rapidly built or copied. Ms. Wall ended the week virtually "up to speed."

During the first four days of school, Ms. Wall introduced 46 routines which were embedded in 10 activity structures. Of the 46 routines, 44 (95%) appeared again in midyear. Of the two missing in midyear, both were management routines. The seven most important routines occurred across two or three activity structures and appeared in three of the four days (yes/no ma'am [e], individual exchange [e], eyes on me [e], choral exchange [e], distribute/collect [s], travel check [e], finished work to bin or book [s]. Of these routines, five are exchange and two are support. Of the nine management routines, 56% were introduced on day one, and 22% on day four; 78% were present in midyear. Of the 24 support routines, 45% were introduced on day one while 13% were introduced on the fourth day; all were present in midyear. Of the 13 exchange routines, 77% were introduced on day one while none were introduced on day four; all were present in midyear. In general most of the routines are introduced on the first and second days. Unlike Ms. Patrick, Ms. Wall teaches all of her exchange routines early on; however, Ms. Wall is working with older, more verbally competent children.

Yoda. Ms. Yoda taught in an integrated school that had shown steady improvements in its achievement standings in the entire school district throughout the last five years. Initially an all black school, it was integrated with an adjacent neighborhood. The integration was accomplished peacefully, but with great trepidation on the part of the white parents, whose schools had been closed. In fact, the educational preparation of the black students in the school was superior to that of the in-migrating white students. That quickly became known and it increased the status of the school tremendously within both communities. Ms. Yoda had a very idealistic, sincere

approach to teaching. She had a long personal history of charitable behavior. She not only personally purchased supplies, books and clothing for children, but also frequently took them on extensive and expensive educational out-of-state trips. In addition, she purchased computer materials and made them available to students whom she felt could benefit from them. Her quiet, almost placid manner was occasionally a cause for concern to some of the other teachers in the school, as her managerial control was weak. She had taught for over seventeen years.

Ms. Yoda's school sent children to their old rooms on the first day and from there on to the new ones. As her new children arrived, Ms. Yoda asked about one who was missing. This action was typical--Ms. Yoda always turned to her students for help in finding out things. Ms. Yoda quietly and gently went over school and class rules, giving some direction about work to be done and pencil sharpening. Unfortunately, her "rules" were not enforced; thereafter, failure to complete work as well as high levels of off-task behavior were frequent. Ms. Yoda did not herself seem to understand the utilizing of routines. For example, on day one, she had the students line up to leave the room. It is not always necessary to have students form lines or exit from their desks in a precise fashion, but the reason <u>for</u> doing it is that it can save time and hassle. Ms. Patrick choreographed her exits to clear a small space efficiently. Ms. Yoda, however, asked her students to line up by height, rather than distance from the door. Solving the problem about height took ten minutes and subsequent line-ups always took a lot of time.

Ms. Yoda taught subject matter content on day one. Day two started with a review of day one for two new students and discussion of homework failure consequences (one of which was never used). Choral responses and the rest of the exchange routines were introduced. Also on day two, the pencil sharpening routines emerged, but badly--namely, any time a student felt the need for a break, s/he sharpened a pencil or took a walk. The salience of the blackboard for communications emerged on day two as did the lesson presentation structure--namely, to give a short three- to four-minute description of the task and then tutor individually. Days three and four had very few

new routines. There emerged some dysfunction of routines because she failed to enforce the management and even some support behaviors. Things took a long time and the pace was slow. The trade-off in benefits for Ms. Yoda's students was a large amount of individual attention that she provided during lengthy periods of monitored practice.

During the first four days, Ms. Yoda introduced 34 routines embedded in 8 activity structures. Twenty-nine (85%) of these routines appear in midyear. The seven most important routines occurred across two or three (in two cases as many as five) activity structures and appeared in at least three of the four days (individual exchange [e], paper format [s], hand raising [e], distribution/collect [s], take out/put away [s], turn to/open/look at/close [s], travel/check [e]). Of these routines, three were exchange and four were support. For Ms. Yoda, travel/check was an extremely important teaching tool. During a monitored practice, she moved from child to child and often tutored extensively, giving mini lessons to students lagging behind. Of the four management routines introduced, 75% were introduced on the first day, 25% on the second day and none thereafter; 75% were present at midyear. Of the 16 support routines, 63% were introduced on the first day while none were introduced on day four; 81% were present at midyear. Thirteen exchange routines were introduced, 77% on the first and the rest on the second day; 92% occurred at midyear. In general, the bulk of the routines were introduced on the first 2 days, with only one new support routine introduced on the third day. Ms. Yoda, who was a poorer manager than either Ms. Patrick or Ms. Wall, taught very few management routines, emphasizing routines that were support and exchange.

Konrad. Ms. Konrad taught in a school which was 100% black. Ms. Konrad was viewed as a strong teacher, able to control children with behavior problems. Both teachers and students assumed that an assignment to Ms. Konrad's room meant that the student had a behavior problem. Much of Ms. Konrad's approach and teacher-centered classroom was a reflection of her reputation and the placement of difficult students in her classroom. Her dramatic flair helped her

to play her role as the tough one. She was active in theater and music group during after-school hours and the summer. Ms. Konrad had attended a small parochial elementary school and a public high school. She began teaching in a parochial school and then moved to the public school where she has been teaching for ten years.

Ms. Konrad's first day set the tone for the classroom quite explicitly. There was to be a high degree of teacher control over routines such as distribution, what to do when work was finished, and even pencil sharpening. In addition, the interaction style was clear--call to correct was introduced in both its versions (student finally answers or teacher supplies answer) during the first lesson. Ms. Konrad also introduced them to her reprimands almost immediately. She covered a considerable amount of content, introducing routines as asides in the lesson. By day two, there were actual lessons that contained activity structures which were very similar to their midyear form. Support routines such as paper set-up were explained and practiced. Ms. Konrad did not share the running of the classroom, but maintained a high degree of teacher control. At the end of day two, her classroom closely resembled its midyear form. On day three, the lesson had a structure identical to midyear. The exchange routines were in place and support routines were minimally cued. Reprimands remained a major management technique. Day four was content-oriented with only one routine, pencil sharpening, re-explained. The teacher's control was evident; she controlled the interactions and the activities, an approach which would continue in midyear.

During the first four days of school, Ms. Konrad used 26 routines embedded in nine activity structures. Of these 26 routines, 24 (92%) were present in midyear. One of the routines missing in midyear was a management one (student messenger), and the other one was a support routine (take papers home). The seven most important routines occurred in two to four activity structures and on all of the first four days (distribution/collect [s], individual exchange [e], travel/check [e], paper format [s], open/turn to/look at/close [s], hand raising [e], and take

out/put away [s]). Three of these routines were exchange and four were support. Of the six management routines, 50% were introduced on the first day, 17% on the fourth day and 83% were present at midyear. Of the 12 support routines, 58% were introduced on the first day, none on the fourth day and 92% were present in midyear. Of the eight exchange routines, 75% were introduced on the first day, none on the fourth day and all were present in midyear. The lower number of management and exchange routines were a function of the tight degree of teacher control in Ms. Konrad's room. She controlled most of the exchanges with students and much of the management. Only in her room did students raise hands for permission each time they wished to sharpen their pencils.

Rivers. Ms. Rivers taught in an all-white school, in an area of the city which was extremely ethnically homogeneous. Her homeroom class (fifth grade) was made up of the same homeroom class she had had the year before plus another group to whom she had taught math the previous year. She was teaching the fifth grade for the first time in many years. We observed both the fourth and fifth grade classes for four days, allowing us to compare Ms. River's behavior with a new class to that in a well-known class. In the following description we focused on her "new class." Ms. Rivers was educated in both parochial schools and public schools and had taught in both. She loved her students deeply, but felt she had not made the initial decision to be a teacher--it was forced on her. She had taught for eighteen years, four as a department math teacher. She felt she was always very poor in math and that was why she was a good teacher.

Ms. Rivers used the first math class with her new fourth graders to set expectations for hard work and high achievement. The majority of the class time was spent in an elaborated practice of the drill she consistently used at the beginning of each math class. The group of routines involved in the drill were described (go to board, draw the T, work quickly, turn around when finished, check work) and practiced. Two subroutines (chalk in right hand, eraser in left and first one finished reads the answers) evolved from the first practice. Paper set-up was described as a

precursor to the homework assignment. On day two, Ms. Rivers followed the drill with the first lesson for the fourth grade math class, introducing exchange routines such as call until correct, individual exchange and her "play dumb" routine. The expectations were again carefully defined. Day three was a continuation of the structure of drill followed by presentation. Ms. Rivers was the only fourth grade teacher who did not assign written work during class until the fourth day, although on day three, she explained the procedures for getting paper for in-class work. On day four, the math class had a structure similar to midyear, the routines were in place and functioning. Even the first written work proceeded smoothly.

During the first four days of school, Ms. Rivers introduced 21 routines which were embedded in nine activity structures. Eighteen (86%) of these routines appear in midyear. The three missing routines were all support (getting paper, homework signed and messy papers returned). The midyear data came from the study's first-year observation of Ms. Rivers' fourth grade homeroom class. The first four days' data came from the second year's fourth grade subject matter class because Ms. Rivers had become the homeroom teacher of a fifth grade class. In spite of this, the consistency across years was very high. The three most important routines (individual exchange, board procedure, drill procedure) occurred over two activity structures and occurred on each of the first four days as well as in midyear. There were two management routines, both of which occurred on the first day and at midyear (line-up and don't interrupt). It appeared then that management routines were more a part of the class environment than they were of the lesson environment. This was confirmed by inspecting the greater number of management routines (six) introduced to the fifth grade homeroom section than were introduced to the fourth grade mathematics class. In the fourth grade, 13 support routines were introduced, 54% on the first day and 15% on the fourth day. 77% occurred at midyear. Six exchange procedures were introduced; 33% occurred on the first day, 17% on the fourth day; all were present at midyear. Partly because Ms. Rivers had this class for only 55 minutes a day, there were far fewer routines, the

lesson structure was more fixed and rigid (drill, review, present, question, practice, start homework), and routines were not used as flexibly. One of the more fascinating routines of Ms. Rivers was her "I don't understand" or play dumb routine in which the students eagerly gave her the reasons why a new procedure worked and how it worked. It was used at the beginning or end of a presentation and involved almost total surrender of control for about five minutes each day.

Pace. Ms. Pace taught first grade in an integrated school which was unique in several ways. It was an open environment with pods and flexible space. It served as a language magnet for the school system and had a tradition of being a very popular school for several middle class neighborhoods. Ms. Pace's school served a predominately black neighborhood and many of the children came from a nearby housing project. The school-wide integration was achieved by busing white children from several neighborhoods. Ability grouping was used to determine children's placement in individual subjects. The classes themselves were often less integrated than the school as a whole.

Ms. Pace's background differed from the other five teachers because she was raised and had lived out of state, primarily in rural areas. Ms. Pace went to a small one-room country school for the elementary grades and then moved to a large city high school. Part of her experience in the one-room school was a significant amount of peer tutoring. Ms. Pace taught in several rural schools and frequently involved herself with making curriculum changes. After moving to the city, Ms. Pace substituted for a semester in the city schools and then moved to her present school, initially teaching fourth grade. She was serving as team leader for the primary grades the year we observed her at the beginning of the year. This meant she had no homeroom or "family group." Ms. Pace taught reading, math and social studies to several different groups of first graders.

Ms. Pace spent her first day explicitly stating and demonstrating routines and procedures. She introduced management routines to control movement, talking and lack of attention, since her

children were young and had limited school experience. When Ms. Pace introduced routines such as paper format, movement around the room and even tearing paper off a tablet, she broke each routine into its component pieces and elaborately modeled each segment. Ms. Pace tightly structured each part of the lesson and she used the attentional device of "eyes to me" frequently. Instructions for activities involving independent work were clearly defined because Ms. Pace utilized small group instruction regularly. Day two was an unusual one in which Ms. Pace cycled her students through tests and periods of restful activities. The routines were used to support the testing with attentional ones critical. By day three, content was becoming more important and activity structures were emerging. The support routines such as paper format and routines to keep the children's attention were important. Unlike the other teachers, Ms. Pace was consistently explicit in cueing routines; for example, she called "Everyone" for choral response. (For other teachers, choral responses occurred when there was no call for an individual.) On day four, Ms. Pace was still segmenting content into small pieces, using attentional routines between each segment. The routines were beginning to function more smoothly and the class structure of rotating small groups was taking form. The first week ended with the beginnings of the operating structures apparent, but with very little fluidity or automaticity in performance, pointing to the amount of effort necessary for setting up a first grade classroom.

During the first four days of school, Ms. Pace introduced 37 routines which were embedded in seven activity structures. Of the 37 routines, 26 (70%) appeared in midyear. The six most important routines occurred in from two to five activities and appeared in all of the first four days (choral exchange [e], individual exchange [e], hand raising [e], travel/check [e], no talking [m], take out/put away [s]). Of these routines, one was management, one was support and four were exchange. It is interesting that while Ms. Pace introduced fewer exchange routines than any other teacher, she used the few she did introduce with great frequency.

Of the 15 management routines, 73% were introduced on the first day, 6% on the fourth day

and 67% were present in midyear. Of the 15 support routines, 53% were introduced on the first day, 13% on the fourth day and 67% were present in midyear. Of the seven exchange routines, 71% were introduced on the first day, 14% on the fourth day and 86% were present at midyear. Unlike the other five teachers, the bulk of Ms. Pace's routines were management and support; the exchange routines were limited. The difference in Ms. Pace's use of routines can be explained by two factors: her children were younger and less school-wise than the children in the other classes we studied; and the structure of her class often utilized multiple small group activities.

The great majority of routines are introduced in the first part of the first day for all of the teachers. They are introduced by a clear statement or demonstration specifying what is required. They are kept in place during the first few days by acknowledging almost every time they are used correctly (lining up for Ms. Patrick; paper tearing for Ms. Pace, yes ma'am for Ms. Wall), and by correcting firmly each time they are violated. The Appendix, which describes the first few days in detail, gives the flavor of these techniques.

Management/Support/Exchange Summary

Figure 3 shows the cumulative count of the introduction and use in midyear of routines in each of the three categories--management, support and exchange. The counts are absolute numbers, thus we can see that most routines are introduced in the first day with gradually less acute slopes towards day four. Exchange routines appear to have the most even spread of introductions across the first four days.

Insert Figure 3 here

Management. Having identified the way individual teachers use routines during the first four days and their stability at midyear, we will now look at how all the teachers use each type of routine. Use of management routines varied from a low of two to a high of fifteen during the first

four days. The first and second grade teachers used the most management routines (fifteen each). However, the best manager in the fourth grade group not only used more routines but also used them in consistently more powerful and complex combinations. There was a crispness to the execution of the management routines as well as a complexity of units of behavior resulting from frequent combination of routines into strings.

The four most frequently used management routines were used by four or more teachers (pencil sharpening [4], line up [6], "don't interrupt" [4], and no talking [4]). With the exception of "don't interrupt," which did not appear in midyear for one of the teachers, all these important management routines were still present in midyear. "Don't interrupt" may have disappeared because interruptions had disappeared. The primary teachers introduced more management routines than the fourth grade teachers, but retained a lower percentage. It is apparent, though, that teachers set up fairly stable routines for management in the first few days of school, with the largest concentration of these routines occurring on the first or second day. Management routines are introduced by verbal description. Later they are cued by single words or gestures. The reasons for using them are not explained to the children.

Support. The teachers introduced a great variety of support routines, 48 in all. Twelve support routines were used by three or more teachers. The implication of this may be that support routines may reflect a teacher's personal style. The idiosyncrasies of these support routines means that teachers may have to spend considerable time at the beginning of the year teaching their procedures to the students. The seven most important support routines were used by four or more teachers (take out/put away [6], paper format [6], teacher collects/distributes [6], student collects/distributes [4], wait to start [5], open/turn to/look at/close [5], keep busy when assigned work is finished [4]). In general, these routines were used throughout the year. As with the management routines, the vast majority of these important routines were introduced in the first or second day. Support routines were introduced by demonstration and description or

demonstration alone. They were maintained by practice and rejection of non-compliance. For the most part, they were cued by the action that required them, rather than by verbal signals.

Exchange. Teachers introduced slightly more exchange routines (40) than management routines (31) and fewer than support (49). The first and second grade teachers tended to use fewer exchange routines than the other teachers.

The five most important exchange routines were used by four or more teachers (hand raising as a signal [5], call until a student gives a correct answer [5], individual exchange [6], travel/check [6], and choral exchange [6]). Two versions of an attention getting routine ("eyes on me" and "pay attention") were used by three teachers, the two primary teachers and the best manager in the fourth grade. All of these important routines were still present in midyear. Out of the total of 32 exchange routines, only two were introduced on the fourth day.

In general, the fourth grade teachers emphasized support and exchange routines with management routines limited. Both primary grade teachers introduced a large number of management routines at the beginning of the year with a 33% attrition rate by midyear. The second grade teacher introduced a large number of support and exchange routines which were still present in midyear. The first grade teacher introduced many support routines, but limited exchange routines. It may be harder to introduce young children to varied ways of communication. Unlike the other routines, exchange routines are not explicitly taught, they are just done. They are maintained by constant use.

Insert Table 4 here

Table 4 shows the ratio of routines used in midyear to those taught at the beginning. A very

high proportion of routines taught at the beginning are being used in the middle of the year and between 78 and 94% of the routines taught in the beginning are introduced by procedure alone. That is, in the first few days of school, children are shown how to do a variety of things they will use repeatedly throughout the year. They are not told why they do these things, but the students seem most receptive to the notion that they need to digest these procedures.

Routines in Activity Structures

Table 5 shows the teachers' use of the most important routines in each category--management, support, exchange--as they occurred in activity structures during the first four days. Routines were included in this part of the analysis if they were used by three or more teachers. While the activity structures existed in a somewhat primitive form the first day or two, they quickly took on the form found in our midyear observations.

Insert Table 5 here

The management and support routines were most likely to occur in a transition between lesson segments, while exchange routines tended to occur during guided practice and presentations. The results are consistent with our definitions of the purposes served by each routine.

Some routines in detail

What follows is a more detailed description of three exchange routines (cycle to correct; play dumb; and "eyes to me") and two support routines (collect/distribute and wait behaviors). The teachers used multiple versions of both of these support routines.

Cycle to correct is a routine used in presentations, shared presentations, reviews and guided practice. Essentially, it involves the teacher calling on students in rapid succession until the correct answer is given. It not only serves to get the correct answer out but also keeps students attending. Ms. Konrad introduced the routine within the first few minutes of math on the first

day. She did not explain that the answers were incorrect; she just repeated the question. By day three, this routine looked exactly the same as it did in midyear. The only change from the first four days to midyear was that in midyear she generally said "no" after incorrect responses and then she prompted. Cycle to correct often served to pick up the pace and alertness of the class and for five of the teachers it was a very useful exchange routine.

A second exchange routine was **'I'll play dumb.'** There were some small clues when the teacher, Ms. Rivers, was using it; but the children "got caught" frequently enough to make one believe that the clues were not universally recognized. Essentially, Ms. Rivers put an erroneous or ambiguous piece of information on the board and proceeded as if it were totally correct. For example, she drew a circle, divided it into six unequal parts, and started to talk about one-sixth. The students "explained" her error to her. At other times, she said, "I don't understand . . . why the three has more value than the nine" (this on day two in a lesson on place value). When this routine was used, it always occurred during a shared presentation and included both a cycle to correct (or complete) and her conversation routine. She also introduced this routine by "doing it" and reinforcing the correct style of response, but she never explained that she would try to fool the class. She simply started the game.

Another exchange routine, **'eyes to me'**, was one of several attentional cues and/or begin exchange cues. It was slightly different from the notion of point look (at a problem on the board) because it was the cue for the beginning of a teacher/student interaction in which the student's attention was to be focused on the teacher and what she was saying, not on a problem or a chart which was being described. The routine was modeled in the first day by all teachers usually without a connecting goal statement, but with corrections for non-compliance. Several teachers said things like "I know you are ready," or "I need you to look at me," etc., but most just stated the request and corrections.

Distribute/collect is, as its name implies, the set of routines used by teachers to pass out material or to retrieve it. Each teacher had several such routines; all taught at least one or two of them on the first day. The routine was used in at least six activity structures by most teachers: presentation, guided practice, transition, test, check and monitored practice. It was introduced by demonstration, verbal explanation and modeling. Some examples of the specifics of distribution were: pass to head of column and pass back; walk to each child and give child paper; go to a location and get a paper. Collect had a similar array. The routine was primarily a time saver and permitted the overlapping of activity structures without transition breaks (monitored practice with homework distribution at the end, for example).

Wait to start and **what to do when finished** were routines that often covered the beginning and end of an activity. The wait to start routine allows teachers to control the pacing of events. The teachers often handed out a paper, told the students to wait before working, then went over directions plus an example, and finally had the students begin working. Wait to start frequently occurred at the beginning of a drill, a test or a timed practice. What to do when your work is finished covered the time when some students finished the assigned task but the class had not ended. All the teachers had a version of this. They sometimes gave explicit directions about things students might do when finished. However, often teachers merely reminded students of appropriate tasks, directing their reminders to students who were talking or doing nothing. Also students knew that an excess of unfinished work from other classes could be completed at this time. What to do when finished occurred most frequently in a monitored practice and occasionally during a test.

Routines in Games

Games, used occasionally by most teachers were most clearly explicated in Ms. Patrick's class. A simple and familiar game was introduced by Ms. Patrick as a teaching device very early in the first day. As her first activity, she led the children in a game of Simon Says. She played the role

of Simon and reminded them that they must listen carefully. This game served two purposes. It required the children to listen carefully to what she said and it also required them to model what she did. Ms. Patrick stressed listening and doing what she did over and over again in the first few days.

When Ms. Patrick had rehearsed a number of routines, she combined them into more sophisticated games to enhance learning. At the end of math class on the second day, Ms. Patrick introduced a game into the oral guided practice. The game had two forms: in the first, the students who stood up could sit when they answered an addition problem correctly; in the second, a number relay game, a student could tag another student if s/he answered the problem correctly. In both game forms, Ms. Patrick asked the child to answer one of the addition problems they had just practiced.

If we break these two game forms up into the elements of which they are composed, we find that Ms. Patrick has incorporated a number of routines in each. For the first game form, an important routine was Ms. Patrick's technique for having children get out of their desks. They had practiced this many times during the first two days, so that even in the excitement of a game, their exit from their desks took place smoothly. When the students did not follow directions in the first try of the game, Ms. Patrick reminded them about listening to directions. She then used her technique for teaching the children during the first few days--she got their attention, explained the directions and asked them to show her if they understood by putting their hands on their heads. (This was the signaling technique she modeled repeatedly throughout the first few days.) They started the game again. Everyone had it until near the end of the game when one boy forgot to sit. She reminded him to follow directions, had everyone stand and repeated the game. By the third round everyone played the game according to the rules.

The second form of the game followed a segment in which Ms. Patrick added new math facts

to the list they would practice. Ms. Patrick briefly described the game, told them she would start and tagged the first player, giving her a problem. The first player answered the problem correctly and got to name the next player. The routine of one student choosing another was introduced in this game form but Ms. Patrick monitored by assuring that no child was called more than once. The game continued until everyone had a turn to answer a problem. Ms. Patrick told them repeatedly during the game that she was trying to get someone out and was unable to do so, increasing the excitement for the children. Ms. Patrick continued to use games both to teach and to create a brief interlude between traditional lessons throughout the first four days. Her games were more sophisticated by midyear, serving primarily as a way of practicing facts and previously learned material. The routines used first separately, and then together in games included: move from seat (in/out) [m]; hands to head [e]; call on another child [e]; listen [e]; and "eyes on me" [e]. The presence of these routines permitted the "game" to be played very early on in the year. Games, in turn, provided drill as well as social interaction. These are "good things," but very taxing for the teacher because the task of reestablishing a quiet classroom demeanor is often difficult.

Dysfunctional routines

Routines, in both goal and function, are scripted pieces of behavior that enhance the learning-teaching interaction in the classroom. However,we observed several instances in which routines served a dysfunctional role--that is they did nothing to enhance management or teaching. The most salient example of this occurred in Ms. Konrad's class. As early as the middle of the morning of the first day of school, she stopped the class and gave a lengthy lecture. These lectures frequently focused on the inappropriateness of certain behavior or thinking, or on the need to strive for higher levels of behavior or achievement. The lectures were not only lengthy, but often impassioned. They were as likely to be directed at an individual student as to the whole class. The children were expected to develop ways to deal with the emotion generated by the teacher. Ms. Konrad's class handled the lectures by sitting in sullen silence. When the lesson

resumed, there was no observable change in class behavior; the only outcome was the opportunity for the teacher to express her emotions.

Dysfunctional routines also developed in Ms. Yoda's room, but in a somewhat different way. Because she allowed exceptions to the routines she set up on the first day (for example, pencil sharpening should occur first thing in the morning), the children took advantage of her flexibility. They used pencil sharpening, bathroom trips and the like as a means to break up the lengthy practice periods in her room.

Student views

Finally, we turn to how the students consider some of the routines. Students from several classes were interviewed using management interviews, stimulated recalls from videotapes and in-class think-alouds. The children were questioned about procedures, activity structures, and their understanding of mathematics, but only rarely about routines. (How do you know when the teacher wants only one person to answer?) The students seemed to be aware of routines in which they actively participated. They also were quite aware of the consequences when a routine failed. The following quotes are taken from discussions the students had with the interviewer, in which their knowledge about routines was expressed when they were describing an activity--for example, homework and what happens to it.

We will start with the student views of three of the more important support routines: waiting, distribute/collect and checking. **Waiting** or what to do when the assigned work is completed, represents a routine for handling the uneven completion rates for longer pieces of work, usually seat work.

Carol 11-31-83 Page 20

S Well, we're supposed to stay at our desks and we have books and library books and SRA's.

I What is SRA's?

S SRA's are reading papers. You read and then you answer questions.

Martin 10-28-83 Page 14

S We would read a book or do a project. We got a reading project. See, it says reading project up there.

I Oh, I see. Yes.

S With the pink star and well, sometimes, we, sometimes she gives us a um, extra assignment if we get done before the class, the whole class is. Then she asks, asks everybody if we're done and if they're not, she tells us how much time we have left.

Bert 10-28-83 Page 17

S Well, we get like, we'll get a math book and start doing a little bit of problems on that and finish it up next day if we get time.

One of the techniques used to **collect** papers was described in detail by a student who was actively involved. The other students seemed less aware of how papers were collected and distributed, except to note that work was placed in a bin at the back of the room.

Martin 10-28-83 Page 3

S We, I, I, we have to pass 'em out to the um, captain of each row, the person that's at the beginning of each row and I come around and collect 'em.

I Oh, you collect them from all the captains?

S I, I um, put 'em in a brown basket . . .

Checking, when it is done by students, has two forms--first, students sometimes correct their own work with marker; and second, they sometimes correct another child's work after switching

papers. The teachers gained time and immediate feedback but risked errors and cheating, points not lost on the children.

Carol 11-03-83 Page 17

S Well, we're supposed to be honest and we usually check the, um, we usually (laughs) we usually check um, the teacher, with the teacher and we, and she gets upset if you, if she notice that you're really not checking it right so we usually use a crayon and we mark everything right, right and the ones that we have wrong, we mark wrong because, well in the beginning of the classroom some people they erased and fixed it and she likes you to mark it wrong, but she likes you to fix it after, after she knows it was wrong.

NOTE: The child has expressed the goal inherent in the routine without its being presented by the teacher.

Bert 10-38-83 Page 14

I Who usually checks the math homework?

S We do most of it. Switch it with each other and check, but we usually don't switch it. We keep it for ourselves.

Martin 10-28-83 Page 11-12

S We check, sometimes we have to give it to somebody else and then they give it to us. We have to, we have to, um, put a check if it's right and an X if it's wrong.

I Okay.

S And sometimes we check it ourselves. Sometimes we don't check it. We just have to pass our homework up and I come around and collect it.

The students were less articulate about **exchange** routines than support or management; perhaps because the teacher usually determines the exchange. The most prominent discussion occurred around questions of how students know whether they were to respond **individually** or

chorally.

Chris 10-28-83 Page 14-15, lines 237-255

S Sometimes she wants the whole class to answer and sometimes they, we, she wants one person to answer.

I How do you know the difference?

S How do you know the difference? She goes, "Ahhh, Denise." She says your name. And then . . . (Chris is slowly moving his finger and finally points it at an imaginary person.)

I Okay and then you, and then the person . . .

S You can tell by the, that little "Ahhh" (chuckles).

I Okay, she really points her finger and goes, "Ahhh?"

S Yeah, like thinkin' who she wants to give it to.

Maggie 10-28-83 Page 17, lines 330-340

S 'Cause she'll call on you. Like, mmm, if sh- if we don't answer then she'll like this, "Don't you know how to answer your teacher?" (chuckles)

I And what does she want then?

S Then she wants the answer to the question. But like if she says, "Martin" or "Maggie," one of them, then we have to answer the question by ourself.

Martin 10-28-83 Page 10

S Like if she wants someone, someone to say it by theirself, then she'd say like, "What's ten?" She would say, "What's ten times eleven, Martin?" That's how she would do it. And then she would say, "Everybody," Then she would say, "We're gonna do some division," like she has flash cards, right, over there.

I Oh, I see them. Yeah.

S And she drills us and when she drills us, the whole class has to say 'em. Then, after a while when she's doing 'em, she'll call on somebody, she'll call on somebody by theirself.

Carol 11-03-83 Page 15-16

S She asks the class to say the answers, she'll go like, "six times five," and the class'll say, "thirty," and she'll ask us what to put down at the bottom, like when you put the zero at the bottom and the three at the top and then she might call somebody, somebody's name and usually after she does that a couple of times in each class, um, we git a hold of her voice and when she- and waits 'til she says something and then we'll answer the question.

Carol 11-03-83 Page 11-12

S Well, she, first before she flash the cards or, you know, she says, "Okay, we're gonna say the cards together," and then when some kids, we got a hold of saying them altogether, she say, she say, "Okay, Carol," and someboo; would, and somebody would and the class would like say it and then they knew to listen for a voice when she said it.

I Okay, so the first time she calls out a name in the middle of it when everyone thought they were supposed to be doing it together, the first time she calls a name, you think sometimes the kids make a mistake, then they answer altogether?

S Yes, yes.

I Even when you were supposed to be the one to answer?

S Um hmm. Because they get all mixed up because Ms. Wall would like, she'd say okay the class and she'd just say four times three, four times five and then after she thought they got all tricked up and everything, she'd say ok and she'd say and individual person, just one person. (This is an amazingly accurate description. Ms. Wall would establish a fast pace of choral responses, humorously break it with call for an individual response and then return to the choral format.)

I Uh huh.

S And the person would ask her but usually the first time, everybody does.

I And so then what does Ms. Wall say when that happens?

S Nothing. Nothing. She doesn't say too much because she, she plays with us like that.

Summary and Conclusions

In this work we have taken the perspective that while teaching, a teacher has the global objective of completing her objectives for a particular lesson. The teacher accomplishes this by teaching students to behave in a coordinated and semi-automatic way for certain types of actions—namely, routines. These routines are taught or modeled in isolation during the first iteration; and then gradually over the first few days are combined together to form strings that permit a series of actions to occur quickly and smoothly. We somewhat arbitrarily divided routines into three categories: management or class running routines; support or lesson running routines; and exchange or interactional routines. We saw that teachers introduced all of these types of routines early and quickly. Most were taught by procedure and some were taught with both procedures and goals. A very high percentage of all of the routines introduced were retained in midyear. We examined some specific routines and how they were introduced. We also saw that children have explicit knowledge of at least some support routines. Their knowledge of exchange routines is mostly implicit with some limited explicit knowledge. Activity structures emerge more slowly at the beginning of the year than do routines. The activity structures are quite primitive on the first day, evolve gradually over day two and three, and are clearly discernible by day four. By midyear activity structures are main features of the classroom and teachers use routines very flexibly to support the activity structures.

Returning to our initial conceptualization of a planning net which we can use to represent each of the lesson segments, we can see how these routines work. As the teacher progresses through a

goal-directed action sequence, small pieces of coordinated behavior are repeatedly used. In some cases, the particular behavior is needed only rarely. In those cases, "directions" are given; but in some cases, the behavior will be needed frequently (sometimes more than sixty instances in one day). In such cases, the teacher invests teaching time early in the year to purchase automaticity in the assembled pre-packaged actions. If all actions were pre-assembled, regardless of their use rate, there would be inefficiency in both the length of the list and time needed to teach it all. Experienced teachers seemed to have subconsciously mapping of what needs to be taught in the first few days and the methodology for doing it.

Teachers introduce routines in several ways: (a) by calling for the action and supporting correct usage; (b) by describing or showing the actions and supporting correct use and discouraging incorrect use; and (c) by responding to incorrect use. The latter technique does not seem to be the best way to get functioning routines established. (See Yoda in the Appendix for elaboration.) The most impressive aspect of the introduction of routines is the speed with which the students learn them. By fourth grade, most support and exchange routines are fine tunings of an already existing system, and many management routines are school-wide.

Teachers are efficient in choosing what routines to introduce. The majority of their routines are taught in the first day and the teachers use these routines as well as build on them. Teachers combine strings of simple routines together to build more complex routines. The certainty with which each element is in place contributes to the ease and fluidity of combining routines.

Students have considerable explicit knowledge of management and support routines but do not explicitly recognize the generic form. That is, they cannot (or do not) tell us that teachers must have a way of passing out materials, and in their class it is done this way. Students have implicit knowledge of exchange routines which they can imitate or loosely explain (it's in her voice). Evidence for the existence of their knowledge comes from students' and teachers' in-class

behaviors. A level of student knowledge of routines is important for the teachers' planning behaviors since, as we recall, the teacher has less control of the lesson at several points. Since students know what to do and are aware of their knowledge, the probability that the subgoals will be achieved increases.

Implications

This research suggests that new and weaker teachers need the opportunity as a part of their in- or pre-service training, to see several models of expert teachers introducing and using routines at the beginning of the year. Novices also need to learn the function of each routine. New teachers appear to have at their disposal fragments of routines. They either change the form or cues, or they do not require completely correct execution in the beginning, so multiple inconsistent versions develop. Routines and their variants (for example, the multiple forms of paper collection/distribution) need to be rehearsed and then used consistently to ensure their availability when cued throughout the year. Our weak manager tended to introduce a routine and then to compromise it almost immediately, so that not only was the original use of the routine unavailable but composite use (the ability to combine routines to play games, for example) was also unavailable. When only fragments of routines are taught or when established routines are allowed to disintegrate, the students do not respond quickly or consistently to cues. As a result, time and fluidity are lost and the cognitive burden is increased.

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Table 1
Timing of Data Collection

	Midyear 81-82	First 4 days 82-83	Midyear 82-83	First 4 days 83-84	Midyear 83-84
Ms. Patrick	X			X	X
Ms. Wall	X	X			X
Ms. Yoda	X	X	X		
Ms. Konrad	X	X	X		
Ms. Rivers	X	X	X		
Ms. Pace	X			X	

Table 2
Type and Quantity of Data by Teachers

	Observational logs			Classroom Tapes		Interviews				
	1st 4 days	All day Midyear	Math Class Midyear	Audio Tapes	Video Tapes	Stimulated Recalls	Planning	Post	Subject Matter Knowledge	Student Knowledge
Ms. Patrick	4	1	23	20	14	9	17	9	3	1
Ms. Wall	4	2	21	16	10	10	16	5	3	1
Ms. Yoda	4	1	17	5	8	8	17	9	5	2
Ms. Konrad	4	1	18	8	8	8	17	7	4	1
Ms. Rivers	4	1	21	0	*8	8	9	6	4	1
Ms. Pace	4	1	15	7	4	4	7	3	3	1

*3 stolen

Table 3

		Patrick	Wall	Yoda	Konrad	Rivers	Pace
Management	% introduced on day 1	47	56	75	50	100	73
	% introduced on day 4	6	22	0	17	0	6
	% retained midyear	67	78	75	83	100	67
	Total number of management routines	15	9	4	6	2	15
Support	% introduced on day 1	44	45	63	58	54	53
	% introduced on day 4	6	13	0	0	15	13
	% retained midyear	94	100	81	92	77	67
	Total number of support routines	16	24	16	12	13	15
Exchange	% introduced on day 1	35	77	77	75	33	71
	% introduced on day 4	12	0	0	0	17	14
	% retained midyear	94	100	92	100	100	86
	Total number of exchange routines	17	13	13	8	6	7
Total % retained		85	95	85	92	86	70

Table 4
Ratio of Median Number of Routines Used to those Introduced

Type of Introduction	Type of Routine: manage	support	exchange
procedure	.82 (40)[a]	.87 (70)	.90 (61)
goal + procedure[b]	1.00 (11)	.83 (16)	1.00 (4)

a ( ) Numbers introduced indicate total number of routines introduced of that type

b A total of 2 routines (m+S) were introduced using goals only they have been added to the goal plus procedure row, they do not affect the ratios.

Table 5
Most Important Routines as They Occur in Activity Structures – Day 1 to 4

	Management						Support											Exchange							
	Pencil Sharpening	Quiets with Eyes	Line Up	Move Inattentive Child	Don't Interrupt	No Talking	Look to Board for Info	Take Out/ Put Away	Paper Format	Collect/ Distribute*	Wait to Start	Take Papers Home	Call S to Board	Fold	Open/Turn to/ Look at	Keep Busy When Finished	Unfinished Work – Later, Home	Hand Raising	Call 'Til Correct	Individual Exchange	Choral Exchange	Sit Board	Travel/Check	Eyes on Me	Paying Attention?
Presentation		1		1		1	2	3	8	4	1			2	2		2	2		6	5		1	4	2
Shared Presentation	1			3		7		4		1	2		4		4			9	5	14	8	4	1	3	4
Review							2		1						2			4	2	8	4		1		
Drill									1		1		3		1			1		1	1	2			1
Test	1		1			6	1	1	5	9	1			2		2		6		2	1		7		
Practice/Homework Check								1	1	2			1					1	1	3	2	1			1
Transition	6	2	33	3	1	18	1	83	14	37	7	3		8	5	4	1	7		10	5		5	1	2
Monitored Practice	5	1		4	1	9	1	7	12	14	4				5	6	7	14	2	9	1		17	1	
Guided Practice			1	3		9	2	10	7	10	2	1		2	4	7	1	14	3	23	18		21	7	6
Homework Assignment														1										1	

*all forms

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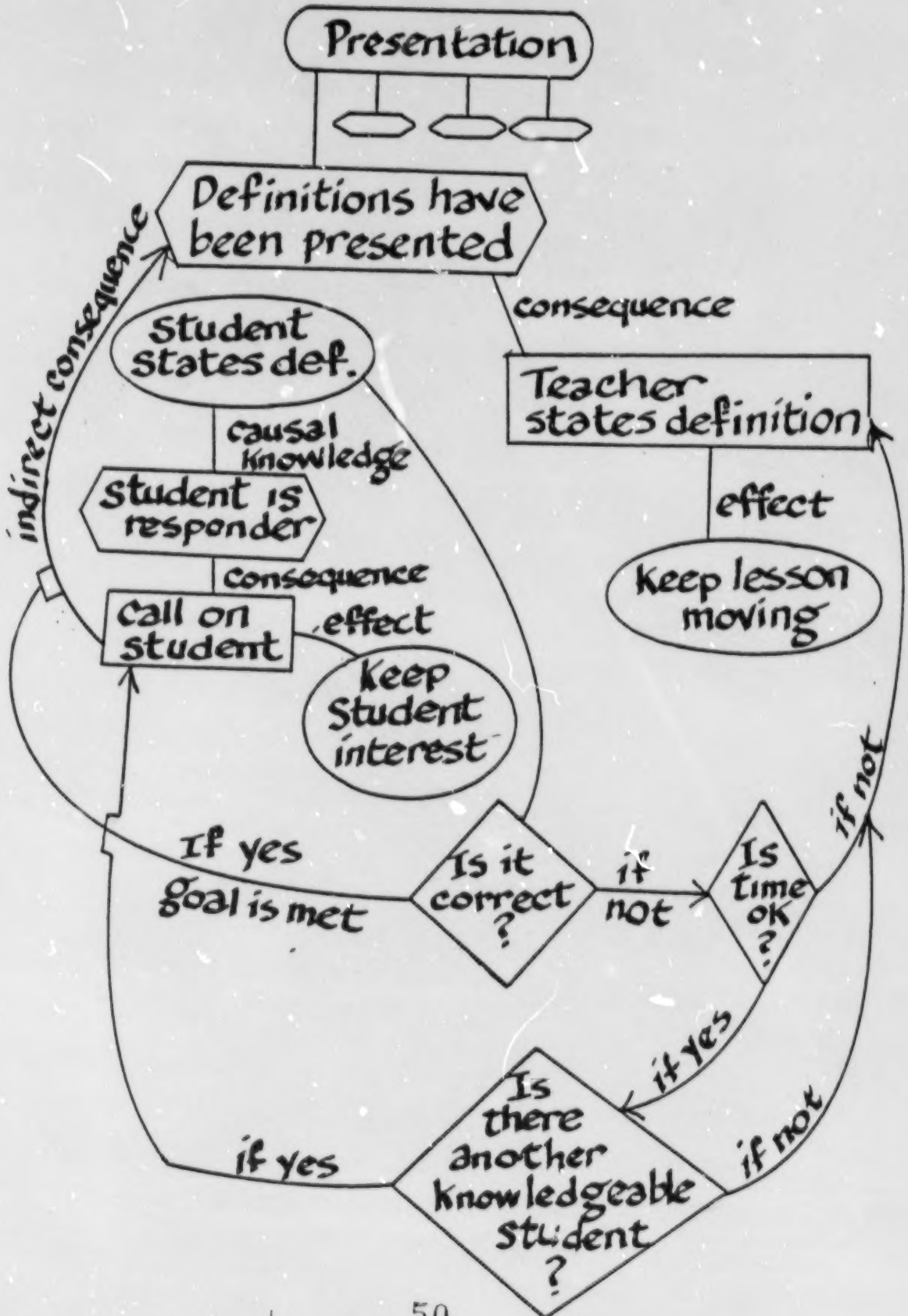
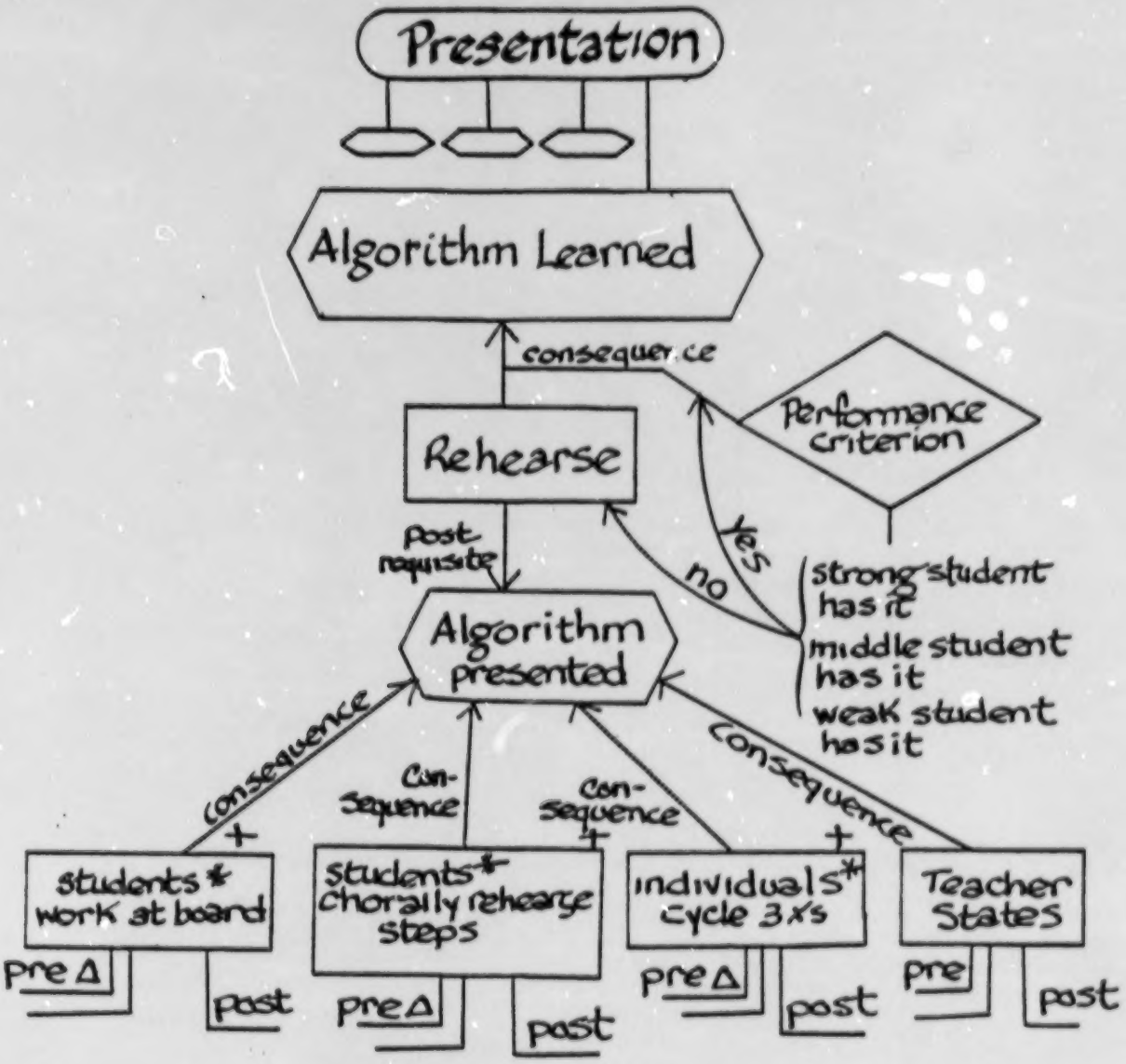


Figure 1. Planning net for definitions



* also has consequence of maintaining attention

+ information for ◇

⌐ problem range selected

Δ⌐ students present

└ child states and does

Figure 2. Planning net for learning algorithm

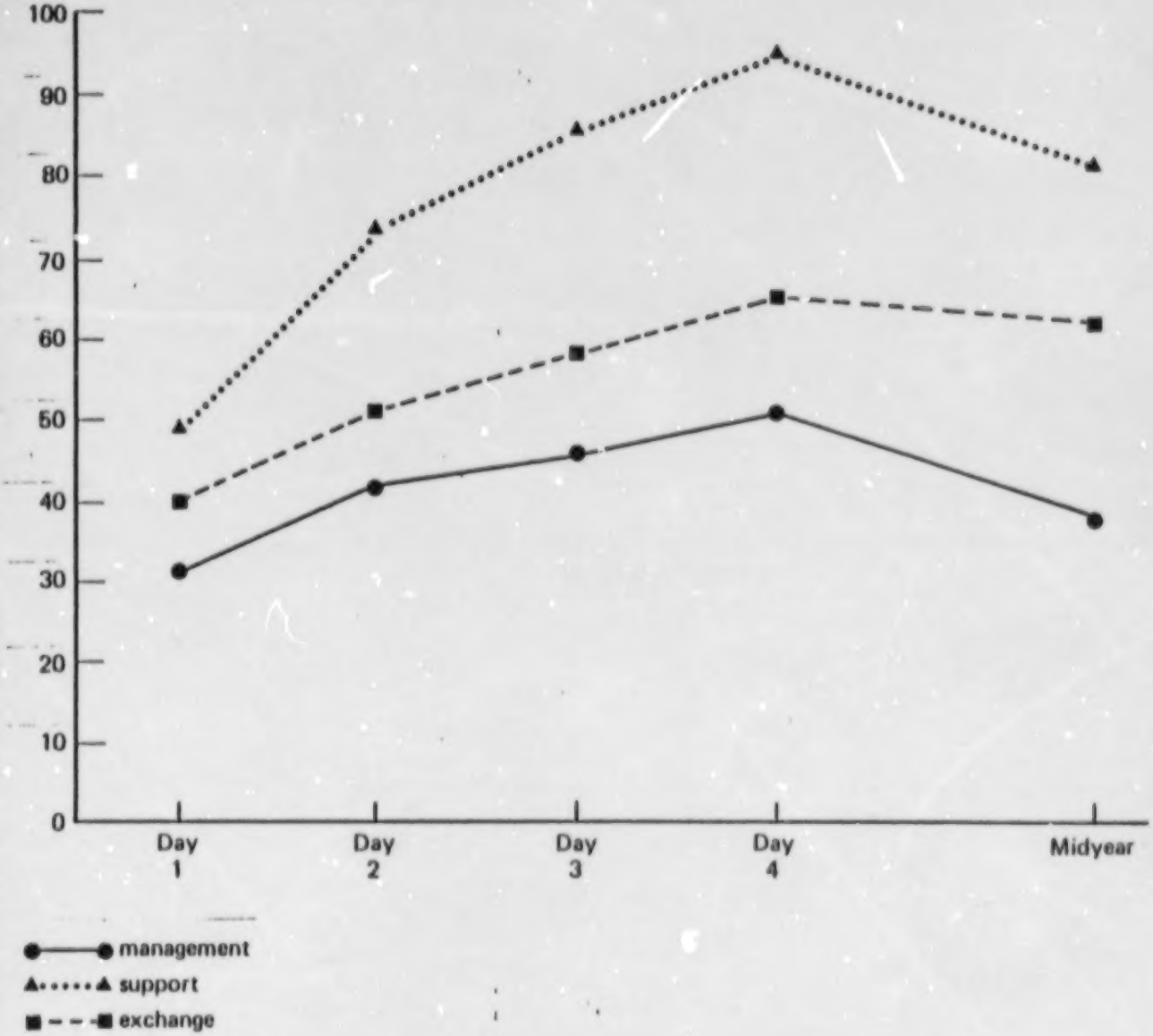


Figure 3. Cumulative introduction of routines.

Appendix

First Day

Patrick. The first day began somewhat late because none of the children were permitted to enter the building until the bell rang. Because of registration of new students, the principal was alone in the office handling the registration, so the bell rang twelve minutes late. This meant that the first children in Ms. Patrick's room were children new to the school. As the children entered the room, Ms. Patrick gave them a name tag shaped like an apple. In Ms. Patrick's school, the children go directly to their room for the year, and Ms. Patrick soon had a line waiting for tags. Ms. Patrick took the time to chat not only with the children, but also with the parents accompanying their children.

Four minutes after the children entered, Ms. Patrick told the children to browse through the books in their desks while she walked around to chat with them. Ms. Patrick allowed the children the choose their seats, which she did not change in the first week.

The first routine was introduced seven minutes into the day. Ms. Patrick told the children that if they wanted to put something in the cloakroom, they should put both hands on top of their heads. She not only described what she wanted but she modeled the behavior for the children. One girl put her hands on her head and was sent to the cloakroom, followed by others. Ms. Patrick's first activity had several purposes. It was a game, Simon Says, and therefore, fun. It was also an introduction to the approach she used regularly in the first few days: Ms. Patrick said what she wanted and then she modeled it. This way, the students both heard the directions and then saw a demonstration of the correct way to carry out the action.

After the game, Ms. Patrick explained the use the first of her routines (hands on top of the head) would play in her classroom. Hands on their head would be the way the children raised their hands in her classroom. She again modeled how she wanted them to put their hands on top of their heads. During this time, several children wandered in. Ms. Patrick did not yet have all the children on her class list. Tardiness and absenteeism were problems throughout the school year in Ms. Patrick's class.

Approximately eight minutes after school started, Ms. Patrick introduced a piece of scripted behavior. She told them that they were going to learn how to get out of their seats without bumping another person (the goal). She gave specific procedures for children on each side of the room. The children on the right hand side of the room put up their right hand and those on the left, put up their left hand. Ms. Patrick checked to make sure each child had the correct hand up, then said, "Ready, go," and had them stand up on the same side of the desk as their raised hand (procedure). They had quite a bit of trouble the first time. Ms. Patrick had them repeat it twice. Each time they lined up during the first four days, they practiced the routine of getting out of their desks (approximately 50 iterations). Ms. Patrick did not tolerate allowing them to line up incorrectly.

Ten minutes after school began Ms. Patrick told them that they would find out how every day would start. The first thing she did was to assure that she had their attention. Children had their desks open. Ms. Patrick counted to three and told them she expected the desks to be closed and remain closed. Ms. Patrick then went through the routines that were necessary for the beginning of each day. The rules consisted of information about which door to use when entering the room; how coats would be hung up (when everyone was seated, she would send a row to the cloakroom). She not only told them what the rules were, but she asked them to think about what would happen if they weren't followed. She spent some time talking with them about the rules, which set up a pattern for teacher-student interaction--the teacher prescribed a structure, but within that structure, the children could examine the consequences of behaving or misbehaving. Ms. Patrick went on to tell them that pencil sharpening would only occur in the mornings. The procedure was that she would call one row at a time to sharpen pencils. At this point, Ms. Patrick passed out pencils and had the children sharpen them. It's interesting that this routine,

by the middle of the year, had moved from the beginning of the day to the very end of the previous day so that when the children came in, there was no time spent in sharpening pencils.

After the pencils were sharpened, Ms. Patrick started explaining opening exercises. While she was telling them this, a child was talking and Ms. Patrick corrected him in a way that she used frequently throughout the year. She turned to him and said, "My turn." Ms. Patrick then took them through each step of the opening exercises, beginning with the roll call. She called the first person's name, then stopped and had a discussion about what their response should be. The children decided they would use the word 'here' which then became the rule for the rest of the year. Next was the Pledge of Allegiance with the standing-up routine embedded in it. She modeled each step of the opening exercises for the children. After the Pledge she read a poem to them. In subsequent days, they would extend this to a sharing time.

Ms. Patrick spent the next fifteen minutes telling the children about the school and its rules. She told them about fire drills and once again, had them practice standing up and getting into line. Because they also need to have a partner for the fire drill, Ms. Patrick used this activity to encourage the children to learn the names of students sitting close to them.

An hour after school began, Ms. Patrick had them begin work. A child slammed her desk as she was getting materials and Ms. Patrick told her that she expected her to close the desk quietly. She also set up a structure for handling things like crayons: they needed a black crayon, so they took it out, put the lid back on the box and put the crayon box and the pencil into their desks to eliminate clutter on their desks. As the children worked, Ms. Patrick walked around the room, looked at what they were doing and talked with them briefly, a pattern she followed throughout the year.

After ten minutes of working on the project it was time to go to art class. Ms. Patrick initiated her "put away" routine. She told them to put away their crayons and counted to see how long it would take. She told them they had until she reached ten and she then named every child who was ready by ten. Ms. Patrick explained where the art class was and reminded them that each teacher had their own rules. The students once again practiced lining up. This time she had one side of the room stand up, line up and actually leave without asking the children on the other side to stand. Two girls had gotten up anyway and Ms. Patrick waited for them to sit down and then had the second side of the room stand and line up.

When the children returned from art class, they began working on reading. Ms. Patrick continued to use the rules and routines that she began before. She began setting up the structure for reading, calling for choral responses and individual responses. She consistently listened for choral answers that were correct. When the children talked out of turn, she commented, "Either let the teacher speak or listen to the teacher." These, plus 'my-turn' were used consistently to remind the children to listen. During the reading lesson, a child shouted out a word and Ms. Patrick stopped the class, had the child apologize, and told them that children shouting out made her very angry. Throughout the lesson, whenever a child was either not listening, talking out of turn, or had the desk open, Ms. Patrick stopped whatever she was doing, called attention to the unacceptable behavior and told them that they will begin working again when the unacceptable behavior stopped. Ms. Patrick was working toward establishing an environment in which she could teach without constant interruptions because of student inattention or misbehavior.

After lunch during math class, she introduced two routines--passing out papers and paper set-up. She described to them what she wanted them to do and then modeled it; she told them to watch how she passed out papers because they may have a turn. Ms. Patrick gave explicit directions for setting up the ditto. She paced them through the instructions.

After the test, she passed out a math paper for the children to work on, then asked a child to collect the papers and monitored the child's procedure. Before she began a spelling lesson, Ms. Patrick broke up the afternoon with some songs and games. When she told them to take out their spelling books, there was a lot of noise. She stopped them, had them put the books away and told them next time, they must do it quietly. She modeled how to do it, using a desk. When the children did it, she praised them. When the spelling lesson was over, an hour before the end

of the school day, Ms. Patrick told them they were going to talk about rules. She asked the children to think about some rules. She told them that she felt that it was important for them to participate in making the rules since they would have to follow them. The rules the children decided on were: no talking to neighbors, no fighting, no pushing or shoving, be neat. As each rule was decided upon, Ms. Patrick, had the students talk about why this rule made sense. She also told the children the consequences for breaking a rule--they would have to stay after school.

The last lesson of the day was an elaborated practice of a paper set-up routine. She passed out paper and described how she wanted it folded, and labeled--names, subject, and date. She drew a diagram on the board and wrote the information on it. She then paced them through each step, and walked around and checked. This was the initiation of Ms. Patrick's procedure of traveling and checking and paper set-up, which continued for seatwork throughout the year. The class did not spend any time on spelling, the actual lesson, but rather spent fifteen minutes working on setting up the first side of their paper. Ms. Patrick told them that this was just a practice, so they could try it again on the other side and she would give them a star for their best work. They spent another fifteen minutes doing the heading on the other side while Ms. Patrick traveled and checked. Ms. Patrick also indirectly let the class know her expectation for behavior when one is finished with the assignment. She praised those who had found something to do (finishing their math papers) while they were waiting to have their papers checked.

Near the close of the day, Ms. Patrick initiated process for ending either a day or a lesson. She reviewed very carefully all of the things they had done during the day and what they had learned. Ms. Patrick ended the day by having the kids say the nicest thing they can about themselves. The children were sent to the cloakroom by rows, got out of their desks (three times because it was incorrect) and lined up according to Ms. Patrick's procedures.

Ms. Patrick used the first day to set up the routines which were critical for the structure of her classroom. The rules and routines were defined, modeled, and practiced with several iterations. She spent the day describing procedures for handling activities which could have become trouble spots--sharpening pencils, going to the cloakroom, standing up and bumping into each other, so that any possible trouble or conflict was minimized. Within the structure, she also set a tone for the classroom in which there was time for conversation and sharing. The attitude was that children should feel good about themselves, but this could only occur when the rules that Ms. Patrick set up were followed.

Wall. At the beginning of the first day of school, Ms. Wall had her previous fourth grade with one exception, a new girl who had come with her parents. Twenty-five minutes after school began, the new fourth graders entered and wandered around, looking for seats. Ms. Wall told them not to worry where they sat since their seats would change. She sat at her desk and called the roll, leading to the institution of the first procedure routine. She called a child's name and the child answered, "Yeah." Ms. Wall corrected him by saying, "Yes. Yes Ma'am." She was consistent in her requirement at the beginning of the year that the children's response to her was always "yes ma'am" or "no ma'am." This routine continued throughout the year in many of the children's responses to her.

Ms. Wall began the first day by asking if they knew anything about her, allowing them to tell her that they knew her reputation for sometimes being mean. Ms. Wall clarified the circumstances when she might be mean: when students do not cooperate, when they do not do their best and when they do not work with her. Ms. Wall's goal-driven routine established a definite tone for her classroom--I am strong and I am in charge.

From this, Ms. Wall moved into defining the procedures for a fire drill, reminding them she expected the procedures to be followed. Ms. Wall gave desk assignments and name tags to put on the front left hand of their desks. As she was assigning seats, she told the students that they should never get out of their seats without raising their hands.

A half hour after her new class arrived, Ms. Wall began to discuss books (each child was given a number to put inside his/her book), changing classes and special teachers for art, gym, etc. During this, one of her new students responded "Yes, Ma'am" and she praised his manners,

reminding them that they should say "Yes Ma'am" or "No Ma'am."

Ms. Wall continued to introduce her rules. She used a questioning style to introduce the rules and the outcome of infractions. She asked, "What do I do about . . ?" The children answered. When she asked, "What do I do about a messy desk," they responded, "You dump it." Ms. Wall told them that she would dump the desk or throw away the books and paper and the owner would be punished. She told them that she kept in very close contact with their parents and, to emphasize this, had them write out a card with their phone numbers, addresses and the name of the person with whom they live. She also stated a rule for writing: one always writes in cursive.

An hour after the fourth graders arrived, Ms. Wall spent quite a bit of time on the school rules, explaining what they were and the result of violating them. This discussion was interrupted by a break for the bathroom. Ms. Wall established her routine for lining up: she called, 'ladies,' and the girls lined up; she then called, 'gentlemen,' and the boys lined up. Before they left the room, she appointed a hall monitor for the boys and one for the girls.

When they returned, Ms. Wall once again talked about the school rules and the outcomes of violating those rules. She described the variety of jobs the children would have, went over the lunch schedule for the year and talked about gym. When she asked them if they had any questions, using her questioning mode, she modeled the answer, "No. No Ma'am." She again raised the issue of strictness and asked them to define strict. She gave her rational for being strict; she wanted this year to be successful. The way to be successful was to come prepared, do their work, and be as quiet as they were at that moment (which was complete silence). She also told them that when they did not behave in this way, she would yell. Ms. Wall followed her statement that she is stricter than the office with a demonstration of her strictness. She showed them a plastic model of a child's face with a flattened nose and told them this was a student in her room who did not listen. The model remained on Ms. Wall's desk throughout the first week. Thus, two hours into school, Ms. Wall had set up quite a number of expectations for behavior and the outcomes of failure to meet those expectations.

Almost two hours after her new class arrived, Ms. Wall handed out the first work of the day. No time was spent on set-up. She gave the paper to them and went to her desk, where she began to call on individual children to come to her desk and get workbooks. Lunchtime dismissal was an opportunity to practice the line-up routine.

After lunch, Ms. Wall immediately told them to take out their pencils as she passed out a pre-test in math. At this point, Ms. Wall went over the precise form in which the paper should be set up, demonstrating it by writing on the board. She explained the pre-test and showed them the bin where finished papers belong.

As some of the children finished their pre-tests, Ms. Wall collected them and corrected them at her desk. While checking papers, she continued to monitor the behavior of a child who had been talking throughout the morning. At this point, some children had taken out the word search sheet that they received earlier, and some had gone to pick books to read. Most of them were busy, but Ms. Wall had not given any directions for what to do when an assignment or test was finished. During this time, Ms. Wall checked to see how many words they had found in their word search and decided that no one yet had a sufficient number of words, so she told them to keep working. They continued until Ms. Wall told them to put the work away and passed back the pre-test, praising them for their scores. She began to go over the answers on the test, using a choral exchange, then moved directly into a short presentation on addends and sums, the same math content that was covered in Ms. Konrad's and Ms. Yoda's fourth grade classes on the first day of school.

Ms. Wall had the class give the answers for the pre-test orally using an individual exchange in which the teacher called on a student. Ms. Wall returned back to using a choral exchange until without warning, she called on a child who was not paying attention. Ms. Wall used this technique of calling on inattentive students regularly. As soon as the inattentive child was caught, she returned to a choral exchange.

When they had covered the pre-test, she had the children take out their math books and turn to page two. She again used a choral response, and turned answering the review problems into a very quick three-minute drill. On another page in the math book Ms. Wall read the problem number and the students answered the problem, but she did not give the problems in order for the first minute. She then switched format, having the boys answer the first column and the girls listen for mistakes. She caught the same inattentive child, a girl, by asking her a problem when the boys were answering. The girls then had a chance to answer the problems.

The next activity was to begin working problems on paper. Ms. Wall passed out the paper, using a routine of passing a sufficient number of sheets to the front of the row and having the children pass them back. They did this without any kind of prompting or directions. Ms. Wall had a student read the directions out loud, the class worked through several problems together and then she told them that this paper would be homework. She followed her assignment with a carefully defined description of the kinds of papers that she would not accept--they cannot be dirty, crumpled or wrinkled. Messy papers would be ripped and they would not get credit. She told them the way to insure having a neat paper is to fold it and put it in their math books.

The thrust of Ms. Wall's first day was to set out and institute the procedures which would govern the students' behavior as well as their academic work. Ms. Wall presented an attitude which despite its overtone of humor was definitely a statement of her extensive control in the classroom. Classwork, although some was accomplished, was secondary to Ms. Wall's goal of structuring her classroom so that expectations and outcomes were clearly defined.

Yoda. In Ms. Yoda's school the children also returned to their original teacher and then later moved on. When Ms. Yoda's new classes arrived, she assigned seats according to a previously prepared seating chart. As the children filed in, she commented indirectly that one child had not arrived. The other children almost immediately gave information about the child, telling Ms. Yoda that he was moving. Ms. Yoda then went down the list of the other children who were missing and got the information about them. What is interesting about the exchange was that not only did a conversational mode emerge immediately but aside from having seat assignments, almost no information about expectations, rules and regulations was given. It was very clear that if this teacher was going to get through the year, the students were going to have to share the responsibility of keeping the room working. Ms. Yoda gave the impression of being slightly scatter-brained, very gentle, very quiet, and in need of reminders. In fact, from the very first day, the children prompted her through actions that they felt were important. Ms. Yoda began with the roll, indicating her preference for "here," as a response only after a child raised his/her hand. This was another indicator of a style of interaction which was common in Ms. Yoda's room. She would give directions or information either after a child responded incorrectly or asked for clarification.

Ms. Yoda started the day with, "Let's look at the books" (there was a stack of books on each desk). She pointed out the book number, telling the children that they were assigned a number to put in each book for identification if the book was lost. The interesting aspect was that the reason for the identification system was explained in considerable detail as was its rationale--books were used in school or, with one exception, at home. The next piece of information was again a structural one--where they were going to hang up their coats and how to do it. They would sit down upon entering and then be dismissed to go to the cloakroom.

Ten minutes into the first day, she informed the class that boardwork would always be on the board in the morning and they should do it. Essentially in her room, the board would be used for communication, like a bulletin board. While she didn't explicitly say that students should check the board, it became very clear throughout the year. The rest of the first part of the morning was taken up with explanations of fire drills, bathroom procedures and pencil sharpening. Pencil sharpening was especially interesting because again, while she gave a specific time for pencil sharpening, the first thing in the mornings, she did not give very clear procedures for getting the pencils sharpened, such as lining up and not calling out, etc., Rather, Ms. Yoda expressed her procedure in a negative "do not sharpen pencils when I'm talking." As is apparent, Ms. Yoda presented routines, often emphasizing the goals, not the procedures as we saw so clearly with Ms.

Patrick and Ms. Wall. She gave the most precise procedures for the fire drill, but other than that, almost everything else was stated in an open-ended way.

Homework was the next topic. Ms. Yoda explained that homework was posted on the blackboard, that there would be homework every night, except for Friday. If the homework was not completed, students should find time during the day to finish it, but if they did not have their homework three times, the principal would be informed. This was a slightly different approach than the rest of the teachers who told students that the consequences of any unfinished homework was that the teacher would keep them after school, punish them or send notes home to parents. Ms. Yoda emphasized when they might finish their work. Setting up papers for homework was equally non-specific; she pointed out the wall model to be followed. Twenty minutes after the fourth graders arrived, Ms. Yoda distributed paper for the first work. She passed out pads of unlined paper, telling the students they were privileged to have unlined paper for mathematics. She was the only teacher that we saw give children their own pad of paper. Ms. Yoda told the students that they would get one pad a month. The distribution of the lined paper was like that of Ms. Wall--she passed the paper out to the children in the front of the rows and they passed it back. Ms. Yoda then gave a fairly specific demonstration of how to set their papers up, using a model on the board.

After setting up their papers, the children have started on their first activity, a writing activity. Ms. Yoda asked the students to do their best, then retired to her desk briefly to look at papers. This was the first example of a model of how the monitored practices would go-- children were given seat work, Ms. Yoda might retire briefly to her desk and then she would travel and tutor consistently through the class. The routine of travel/check was the most elaborated in Ms. Yoda's class. In math, Ms. Yoda gave mini lessons and tutorials during her traveling, providing far more teaching than any one else we saw. She did however, on the first day tolerate more talking and off-task behavior during seatwork than the other teachers.

After the papers were completed, Ms. Yoda asked students to check each other's work by switching papers. She explained how to pass papers in after they are checked or when they are completed. During a discussion of the autobiography that they were going to write along with pictures, a child raised a question about pets. Ms. Yoda followed the diversion by launching into a discussion about pets in the classroom, including her experiences with a summer program involving zoo animals. This was an interesting and pleasant but not particularly functional routine, in which Ms. Yoda established a clear precedent for having conversations. She did go off into conversations with the children on interesting topics. The class quickly learned that this could be used to their advantage especially if they would like a lesson to stop, stall or change directions.

Ms. Yoda's attempt at lining up was fairly chaotic and in sharp contrast to Ms. Patrick's and Ms. Wall's clearly defined procedures. Ms. Yoda decided to have the students line up by height. She left it to the kids to figure out their respective places in line, leading to some confusion at the first line up. The confusion was limited by the smallness of her class--thirteen students. Ms. Yoda called the girls first; they settled on a line-up and the boys followed. She then told them their positions would stay fixed, regardless of future height alterations.

After they returned, she gave them a math pre-test. It was not the scheduled math class--she explained she wanted to know where they were in math before the actual class. The children settled right into the work, shared answers, which was ignored by the teacher as she sat at the front of the room and corrected the writing papers. As the children finished, Ms. Yoda collected the papers but she did not give them any directions for things they might do as they wait. Ms. Yoda gave the children time to work at their own pace and then, when they were finished, time to do what they wished. After the pre-tests were collected, Ms. Yoda distributed the reading books and had the children glance through them. She had them clear their desks and started to give another pre-test but could not find it. She turned to the children and said, "Well, I do this quite often and you're going to have to keep your eye on me, especially the children in the front row." One of the children then commented that the teacher last year also had a messy desk and not to worry because it was the sign of a good teacher. An hour and a half into the first day of

school, the children had already learned to comfort the teacher for her apparent slight disorganization.

Ms. Yoda dictated a spelling test and reminded them to write in cursive, the expectation for all the fourth grade classes. The second iteration of checking was initiated--student's checking their own work. Ms. Yoda had three interruptions in a short space of time for delivery of supplies. She did not deal with them very directly, but waved them aside, and continued her lesson. By the end of the first day, she had approximately nine interruptions. During a lesson on looking up words in the dictionary, two children started chatting. Ms. Yoda called on them as a surprise technique with no reprimand, just as Ms. Wall did. When the children left the room for lunch, Ms. Yoda set up the board for math, writing addend plus addend equals sum on the board.

After the children returned from lunch, math class began. Ms. Yoda went over the meaning of the two terms, addend and sum, introducing the same subject matter in math as Ms. Wall. After her short presentation, Ms. Yoda told them what page to work on--page two and three. She directed their attention to the two problems--67 and 68 on page 3--that she felt would give them difficulty and explained how to do them, taking about 3 or 4 minutes. Ms. Yoda then said, "Go ahead and start working the problems." This defined the way math class would proceed for the entire year--a short presentation, very brief informational statements and then a request to start working. Much of the instruction occurred during tutoring. Ms. Yoda moved around the room and corrected format, paper set-up and content. Children who wanted to get a drink, go to the bathroom, sharpen their pencils, etc. were free to do so, although they asked Ms. Yoda's permission to leave the room. The students set up a pattern of interrupting the lengthy seatwork period with breaks of movement around the class or to the hall. Thus, during the seatwork period, children had a fairly low on-task rate. They did get most of the work done, but also spent a good deal of time visiting, checking on how everyone was doing and generally wandering around. Ms. Yoda ignored this as she continued to do throughout the year.

Twenty-five minutes after seatwork began, Ms. Yoda had checked the paper of every child. She sat down at her desk and corrected the pre-test. After spending some time correcting, she started traveling, tutoring children, and keeping them on task. Before discussing the two tricky problems (67 and 68) in detail, Ms. Yoda had the class line up for a bathroom break which took ten minutes. The children passed their papers in, wrote their names on their erasers and papers, and put their math books away. Ms. Yoda then assigned homework.

Ms. Yoda's first day has had procedural information about line-ups, homework expectations, and how materials were to be used. It also set the tone for the way interactions would take place. Routines were present, but not tightly adhered to as in Ms. Wall's and Ms. Patrick's rooms. The specific procedures were more loosely defined, the goals stable, but elusive and the looseness of the structure was costly in terms of time and energy later in the year.

Konrad. In Ms. Konrad's school, the children also reported to their former classrooms the first day of school and then were promoted into their new classrooms. About forty-five minutes after school began, her new fourth graders arrived. During the first task of locker assignments, the first routine emerged and it was a routine of discipline. There were two primary modes of disciplining that occurred in Ms. Konrad's class throughout the year--one was a severe personal reprimand to a child done partially in public and partially in private; the second one was a group moral lecture. In this case a student talked back to Ms. Konrad as she was assigning lockers. The girl was told to stand outside the door. Ms. Konrad left the room and reprimanded her and then continued to pass out locker and book assignments.

Fifteen minutes after the fourth graders arrived, the first group reprimand occurred. It was a relatively short one, lasting only two minutes. Ms. Konrad then moved into her first substantive discussion, a social studies lesson. She gave a fairly detailed exposition of how a book is set up. The students were silent until called on individually. This was Ms. Konrad's introduction of her individual exchange routine, as well as the presentation activity structure.

A subset of the individual exchange routine was introduced when Ms. Konrad asked a question, failed to get a correct answer from two or three students and then supplied the answer

herself. This version, "call until correct" could be found in all teachers, but Ms. Konrad introduced it earlier than any of the others. Ms. Konrad continued a pattern of individual exchanges throughout the next six minutes of class. So, in a very short time, the primary mode of interaction in the class had been established; that is, the teacher queried and waited for correct answers. She then decided to supply the correct answer herself either because she had tried several students and failed to get a correct answer or she failed to get any answer at all.

In this particular school, external interruptions occurred more frequently than in most schools. Teachers handled interruptions in a variety of possible ways. Ms. Konrad handled them very abruptly; so that it was clear that the interruption was an inconvenience, that the most important thing for Ms. Konrad was teaching a lesson. In general, interruptions were not tolerated; students learned that very quickly.

Just before the social studies lesson was over, Ms. Konrad asked the class a question without calling anyone by name. A student raised her hand and Ms. Konrad called on her. Signaling to be called on was introduced. After the social studies lesson, the teacher initiated a variety of routines such as pencil sharpening and putting supplies away, bathroom line-up with pairs of the same sex, and distributing supplies, etc. The approach she used for pencil sharpening was unique. She first told the students to sharpen their pencils by asking them to line up at the sharpener. Ms. Konrad observed their behavior in line; only after she had assessed their behavior did she give them a procedure for sharpening pencils--one person at a time. Many teachers posted information in a relatively public place and students start operating on it at their convenience. Other teachers took a much more serious orchestrational mode and waited for the downbeat. That was, they had everyone look at them ("eyes up here") or attend to them before they allowed students to start their tasks. Ms. Konrad used the second approach to starting a task. So, before beginning the next lesson (math), Ms. Konrad initiated her wait-to-start routine (Note that there is a distinction between a teacher waiting for students and students waiting for a teacher as in Ms. Yoda's room).

The math class began with a pre-test, as in Ms. Wall's and Ms. Yoda's rooms. Ms. Konrad prescribed what to do when they finished--turn over their completed papers and she would give them instructions. This routine continued throughout the entire year. The teacher then collected the papers and passed out the next set of materials. Each collection and distribution was carried out by the teacher, unlike other teachers, where students passed materials to a central location and then handed it in, or actually participated in the collection and distribution. Ms. Konrad, in contrast, walked up and down the aisles and collected the materials, retaining the maximum amount of control. This was still the case in midyear. After the test was finished, a routine for finding a place in the book was initiated--get the book, turn to this page, and attend to the top line. Again, this was a substantive routine used very frequently throughout the rest of the year. After discussing Chapter 1, Ms. Konrad launched into a lecture dealing with the children's use of their fingers while doing calculation. She gave a very lengthy discussion on how facts had to be memorized, how children were expected to know things by fourth grade and so on. Concluding this, Ms. Konrad immediately discussed the importance of doing well in science. The connection escaped both the note taker, the reader and probably the children.

As mentioned previously, this particular teacher has a fairly dysfunctional routine of giving not only disciplinary statements in public, but using very long winded, moral lectures as disciplinary tools. The first indication that there would be impromptu spontaneous teaching occurred near the end of the first math period. In this case, a child mispronounced "addend," leading to a mini-lesson on decoding. Thus, by the end of the third hour of school, the children were familiar not only with the mechanics of managing classroom activities but had learned the style of interaction that would occur. All of the style setting behavior for this particular classroom was dictated by the teacher. There was virtually no negotiation, or multiple role-playing on anyone's part. The teacher set the tone and the rules. The result was a very teacher-directed environment. As an explanation for this stylistic approach, it should be stated that Ms. Konrad was seen as a strong, powerful personality in the fourth grade and, therefore, got almost all of the discipline problems. For the students who were discipline problems, going to this teacher

means that they had "made it"--they must be pretty bad to get Ms. Konrad. As a result, she had a huge management job the first few days and did need to spend a lot of time verbally muscling the kids.

Rivers. Approximately one hour after school began, Ms. Rivers sent the fifth graders who were in her homeroom to the other teacher and the fourth grade entered. There were eighteen children, thirteen girls and five boys. They took their seats very quickly. Ms. Rivers called the children row by row to the bookcase, where they got their math books.

Ms. Rivers began the math lesson with a query, "Do you know why you're here?" resulting in a discussion of "yes, we're here for math." She introduced them to the room by having them look around. The first topic was homework--there would be homework every night; all homework had to be signed by a parent so that the Ms. Rivers knew the parents were aware of what happened in school. This was one of the first examples of goal driven statements in Ms. River's class. Ms. Rivers frequently said, "This is the reason I'm going to do this." She then went into an explanation of the curriculum: These were the twenty objectives and the class was going to learn them. The expectation was that the teacher was there to help and support and the students were there to learn. Ms. Rivers, again, set a high level of expectation. She went on very quickly to pass out and set up papers, telling them very explicitly how to do the paper set up. They folded the paper into sixteen blocks and were told how to use each block. Ms. Rivers then modeled the paper and set-up for the children.

Twenty minutes after math began, she had children start a drill activity. This drill activity would be done every single morning by all of the children. She called out a string of numbers that the children wrote on the left side of a long T. At the top, they wrote the number and an operator that she gave them. In this instance, she made a long T and then wrote the numbers 2, 4, 6, 8, 0 1, 3, 5, 7, 9 and "times two," modeling the process at the blackboard. The children gave the answers orally. She called one boy and asked him to get the erasers, meanwhile, assigning the boards by rows. Only two rows could fit at the board; the rest stayed at their desks. This assignment procedure was used for the whole year. Another subroutine that developed was that the children held the chalk in their right hand, the eraser in their left (or vice versa if they were left handed) and answered quickly. When they were finished, they turned around. The first one finished got to read off the answers. These components of scripted behavior were taught the first day and stayed absolutely fixed. Ms. Rivers then introduced the routine for shifting: the first two rows went back and the next two rows came up. This was the only activity for the fourth graders during their first math class. They left for their homeroom and the fifth graders returned.

The math lesson began immediately for the fifth graders. Ms. Rivers set up her routines briefly with little explanation, indicating the familiarity between teacher and students which was in contrast to her elaborate explanation of paper set-up, drill and homework for the fourth graders. Ms. Rivers talked about reviewing work that was difficult last year. She chose place value for her first lesson, thus skipping the entire first section of math book. Ms. Rivers was the only teacher who skipped a portion of the book and she did it without a placement test. She either defined terms or called on children for the definition of terms. When Ms. Rivers passed out papers for this class, she gave brief directions for paper set up. In response to students' talking, Ms. Rivers introduced the way in which seatwork was supposed to be done--quietly. She then told them what to do when they were finished: turn their papers over and sit. There was no fill-in activity. Paper collection was defined. Ms. Rivers introduced her routine for requesting attention--"eyes front, look at me, give me your attention," then, a short wait. The paper correction was done individually. A discussion on why place value was important in the number system was the first indication of a conversation explicating fairly clearly the ways discussions occur. Ms. Rivers' use of discussion was more clearly explicated in the next couple of days.

Ms. Rivers' first day with the new fourth grade class was very content-centered; the routines she introduced were designed to support the lesson and enhance the teacher-student exchange. One suggestion for the limited management routines in the fourth grade class is that this was a task for the homeroom teacher, not a teacher covering only one class.

Pace. Ms. Pace's first day was unique since she was the team leader for the first grade (five teachers). Because of this, she was not assigned a group for homeroom but rather taught different groups of children for reading, math and social studies. In addition, the grouping in Ms. Pace's school was done by ability so that the first week was primarily testing, and groupings of children changed almost daily during the first week. Stable groupings were not determined until the end of the week.

An hour after school began, the first four children arrived at Ms. Pace's room. She seated them, asked their names and checked who their siblings were (a technique Ms. Pace used with many children). She then gave them crayons and papers for drawing, setting up a procedure for waiting, which she used consistently across classes. In the almost fifteen minutes until other children arrived, she traveled and chatted with the children.

When seven more children arrived, Ms. Pace repeated the introduction with these children. She added an additional dimension to the waiting, giving the children instructions for tearing a piece of paper off a tablet. Ms. Pace, unlike most of the other teachers, encouraged the children to get their own paper from a central tablet, rather than controlling the distribution herself. When four more children arrived, introductions were handled and the three girls were sent to a table together and the boys were sent to a "boys" table. She continued this sex segregation with the next group of four children who arrived.

A half an hour after children began arriving, Ms. Pace explained the procedures for free time--they can use pencils, paper and crayons. She then defined the procedure for putting things away. Since the room had both desks and tables, she gave an explanation for each. The children put the things they were using away and Ms. Pace told them to put their hands on top of their desk, explaining that meant hands flat, side by side on top of their desks. The first activity was a choral memorization routine, using the children's names as content. When a child talked out of turn, s/he was corrected and reminded to talk only when talked to.

The procedure for distribution of paper was further defined at the start of the next activity. Children at desks had their own tablet, those at tables shared a tablet. All children tore off their own paper. Ms. Pace demonstrated tearing as well as the correct position for holding a pencil.

At the beginning of the activity, Ms. Pace demonstrated and checked paper set-up, including writing names. Ms. Pace moved to the chalkboard for a writing lesson and introduced a routine for the lesson. Children watched her as she modeled one segment of the the lesson on the board, in this case, one letter; then they wrote the letter and looked up as soon as they finished. Ms. Pace set up the first iteration of an important routine for getting the children through a task. She maintained her control of the class and the flow of the task by calling, "Eyes to the front" regularly and commenting when she saw them looking up quickly.

When the writing lesson was completed, she asked them to put their things away, giving cues for the children at the tables and at the desk. She defined the routine for movement in the room --stand up, push your chairs in, stand behind the chairs and wait. This same routine was repeated with all the groups of children she taught. Small groups of children were called to move into a semi-circle she drew with chalk at the front of the room. Ms. Pace told the children to sit Indian style behind the line. She helped them both in finding a place and in positioning their hands and feet.

Ms. Pace began the first of many story reading times during the first four days. The story was familiar so she read quickly, paused and then let the children chorally insert the word. As the story progressed, she commented on their behavior while sitting and increased the interaction with the children by introducing a questioning format: teacher questioned, called on an individual child, and child answered. After thirteen minutes of the story, Ms. Pace increased the number of management statements. She asked a child who was inattentive and bothering others to leave the circle and sit at her desk. Ms. Pace frequently moved inattentive children during the first four days.

The story was over an hour after all the children arrived. Without dismissing them from the

circle, Ms. Pace gave instructions for the next set of activities, naming the children who would do each thing. Ms. Pace kept a group of the children in the circle and began a reading group with them. She cycled children through activities for the next half an hour. This cycling of small groups of children through activities was a structure Ms. Pace used frequently, both in the first few days and throughout the year.

Ms. Pace kept this group of children until lunch. Dismissal was an elaborated procedure during which Ms. Pace listed the children's responsibilities on leaving--desk cleaned off, chair pushed in, standing and waiting without talking. She then called groups who returned to the same homeroom (family group) to line up and leave separately.

Math class occurred late in the day (at 2:30). The group Ms. Pace had was composed of some children she had in the morning and three new children. Ms. Pace began with demonstrating how to tear paper off a tablet. She told them to get a pencil. There was a delay of seven minutes between the entrance of the first group of children and the last child, a problem that persisted throughout the first few days.

When all the children had arrived, Ms. Pace used the attention routine--"Eyes to me." She initiated an exchange which moved quickly into writing numbers, with a brief teacher description of the task. Ms. Pace traveled and checked with children as they worked.

After ten minutes, Ms. Pace told them to stop, defined their tasks (put names on paper and pencils inside desks). She then began a paper collection routine in which three children were identified to collect papers from specific areas. During an interruption the class began chatting and Ms. Pace used a management technique ("shh" for quiet), which she used consistently and frequently throughout the year.

One interesting aside to Ms. Pace's day was when she miscued the children for the dismissal routine, saying "Desks, stand." Nothing happened and she re-stated the cue and the dismissal routine proceeded smoothly. Ms. Pace ended math class early so the children could go outside to play because she felt the day was too long for first graders.

Ms. Pace's first day with first graders covered many routines in detail that teachers with older classes would assume were part of the children's school schema. Movements, behaviors at any place and even how to tear off paper were carefully specified by Ms. Pace as they were by Ms. Patrick with second graders. However, Ms. Pace was the only teacher to set up a class structure in which the children worked in small groups. This was partly a function of the school in which Ms. Pace taught, but more importantly it set the stage for an extremely important class structure that Ms. Pace used extensively in midyear.

Second Day

Patrick. Ms. Patrick opened her second day by excusing children row by row to the pencil sharpener and the cloakroom. Children who went out of turn were reminded and sent back to their seats. As soon as this was completed, she called the roll, reminding them "here" was the word they decided on the day before. After the Pledge of Allegiance, Ms. Patrick read the class a poem, relating its contents to their city. She reminded the children that if they wanted to answer, they must put their hands on their heads, as she demonstrated. Ms. Patrick's homework for the first night had been to know to know the weather and temperature, combined with the date and the month. This remained a constant part of the morning exercises. During this discussion , she quieted a noisy child with her eyes and reminded children not to call out.

About fifteen minutes after the children entered she told them that it was sharing time. This particular sharing time was teacher directed since Ms. Patrick introduced a discussion of the space shuttle flight which had occurred during the night. There was a short period in which the children shared some personal information. One child interrupted another child and was reminded not to interrupt. Sharing ended as a tardy child entered.

A half an hour after school began, Ms. Patrick told the students that reading would be next

and that it would usually occur right after sharing; however, by midyear, math was at the beginning of the day, followed by reading. Ms. Patrick began the lesson by asking for individual responses, but did not explicitly state when the exchange was to switch to choral responses. She got choral responses simply by no longer saying an individual child's name. Five minutes into the lesson,she called their attention to her by saying, "eyes to the front." Before Ms. Patrick had the children practice any reading words, she modeled the complete process for them at the board. When she finished, she had the children practice the sounds individually, blending one at a time and then the whole word, using a very carefully defined order. The next task was to make sentences using the new words. Ms. Patrick called on several children who were not able to make a sentence, so she made the sentence herself. Throughout this lesson, Ms. Pace reminded children who were not raising their hands in the way she wished that she only called on people with their hands the right way.

A half an hour into the lesson, Ms. Patrick took a child who was inattentive to the front of the room, reminding the class that they must pay attention. When she called on the inattentive child a few minutes later, he could not answer and the class began to giggle. Ms. Patrick established a tone of respect for others by promptly and unequivocally stating that no one laughs at another person's mistakes. She then helped him through the difficult word.

An hour after school began, Ms. Patrick told the children that they would break for the bathroom. The line-up went smoothly except for one child who ran into line before his turn. He was sent back. When they returned to the room, Ms. Patrick gave them their papers from the first day for them to look at; then had them pass the papers in again, describing how to pass in for the teacher or a student to collect. She followed with the passing out of a new book for phonics and the special pencils that they needed for the phonics lesson. While they organized their materials, Ms. Patrick reminded them not to talk. She then gave elaborate directions for preparing the workbook and using it. Ms. Patrick's set-up's were lengthy, but each detail was covered carefully and monitored by the teacher as she traveled and checked. By midyear, the time and effort were reduced and change proceeded smoothly.

The phonics lesson involved writing, choral responses and individual responses. Ms. Patrick encouraged them, telling them to "pat themselves on the back" when they had something right. The pace was slow and the children's attention wandered. Ms. Patrick monitored the behavior, reminding children not to talk and finally putting names on the board for staying after school. When she stopped the lesson, Ms. Patrick told them they covered less material than they intended, mostly because many were not paying attention. It is important to note that Ms. Patrick had the lower track of second graders this particular year. As a result, they started out with academic work quite slowly.

Despite her reprimands, Ms. Patrick moved directly into another lesson--a spelling pre test. She showed them how to set up a paper for spelling. This plus the pretest took approximately fifteen minutes. The children had now been in school for over two hours. Ms. Patrick spent the next 25 minutes before lunch in less demanding activities. The children first sang a song and then Ms. Patrick introduced them to the room, pointing out the learning stations she utilized regularly. When she finished, she asked them for the best part; they gave her some answers, but she told children they were the best part. Lunch followed, but the class did not execute the line-up properly, so Ms. Patrick had them redo it.

Math followed lunch. Ms. Patrick called, "all eyes in front" and moved immediately into a shared presentation using a felt board. She used sets to introduce simple addition problems, first by having the children count the sets and then by writing the problems on the board. She mixed individual and choral exchanges briefly, then asked a child to come up and help her. Ms. Patrick maintained control by specifying the sets she wished him to make while actively involving her students. She told the class that she would get a turn, and then a child would get a turn--an introduction of a game-like quality to the presentation. Ten minutes after math began, she moved them to working with the written problems on the board.

A few minutes later, she introduced another element into the lesson--story problems. Ms.

Patrick used eight of the addition facts on the board in her addition problems, leaving one fact (6+3) for the students to use in a word problem. She called on two girls each of whom gave her a story.

Twenty-five minutes into the lesson, Ms. Patrick changed the lesson to practice of doubles. She said them first then had the children answer chorally and finally had the girls and boys answer separately.

After the practice, Ms. Patrick began a game drill in which there were two game forms. First, she had the children stand, telling them if they got their problem right, they were to sit down. The first time around the room, no one sat even if they had the problem right. She reminded them about listening to directions, went through the directions again and asked everyone to show that they understood by putting their hands on their heads.

A half an hour after math began, she changed the content to adding zero to a number. Several children began talking and she added several names to the list of those staying after school. She then gave them the rule for adding zero and had them practice a mixture of doubles and adding zero for about two minutes. She had the kids stand again and gave directions for the second form of the game drill--a number relay. Ms. Patrick started it off by tagging a child, who answered her problem right. When a child gave the correct answer, s/he could tag another child. Ms. Patrick continued to give the problems. There was a fair amount of sex segregation in the game, but each child had a turn.

Almost forty-five minutes after math began and two hours before school ended, Ms. Patrick took them to the bathroom. They again had to line up twice. When they returned, Ms. Patrick gave them a math ditto, telling them they had fifteen minutes in which to complete it. She gave them directions for setting up the paper and told them to wait until she said to start. She asked them to let her know when they were ready by putting their hands on their heads. After she got the children started, Ms. Patrick noted on a pad the children who were using their fingers or another aid to solve their problems. After about five minutes, the children began finishing. Ms. Patrick waited another three minutes, then asked those who had finished to pass in their papers and to think of a riddle. She gave them one riddle, then called on children to come to the front with and tell the class a riddle. She helped children who had riddles without sufficient clues in them.

As soon as the time for the math paper elapsed, Ms. Patrick collected the papers and introduced a social studies lesson. They first talked about people they knew in the school and what their jobs were. Ms. Patrick then passed out drawing papers and asked them to draw a person in the school, but keep their identity a secret--another game. While they drew the pictures, she walked around and tried to guess who they were drawing. When the drawings were finished, she had children come up, one at a time, show their picture and call on another student to guess who was in the picture. It was time for them to go to gym before everyone had a turn, so Ms. Patrick promised they would finish the next day. They got into line and left for gym, which was their last period of the day.

Wall. As soon as the opening exercises were completed on the second day, Ms. Wall said "eyes up here," and she showed them how she wanted them to fold paper for what was called bell work. Bell work was on the board when the students came in in the mornings and was to be completed before the actual work of the day began. While the students completed their bell work, Ms. Wall called the students up to her desk in groups of three to check the math and spelling homework. As they finished their bell work, the students placed it in a bin for papers at the back of the room. When Ms. Wall correct the homework papers, she asked the student helper to return the papers. At the same time, Ms. Wall passed out paper for the board work, the work for the time when reading groups occurred. Ms. Wall went through an elaborate demonstration of how to put headings on their papers, then traveled and checked. As she walked around the room, she commented on how neat the papers were. She next reviewed the problems for bell work by having a child read the problem and then answer it.

Fifteen minutes after school began, she passed out a ditto for them to work on, and gave them

directions, as well as a list of things they could be doing when their board work was finished. She briefly went to her desk, corrected the bell work and then returned it, again praising the work they had done.

Ms. Wall began organizing the reading groups. First, she handed out unfinished work books from the previous year. She did this by calling students individually to her desk. She then called a small group to sit at a side table and told the rest of the students to be quiet and not to interrupt her. She gave the small group a pre-test, corrected some and then began to travel and check throughout the class. She quickly returned to the reading group and explained how she was going to set up her reading group. She introduced them to the new book by having them look at the stories in the table of contents. She also explained how she would have them use the work book that went with their series. The reading group lasted for about twenty-five minutes. Just as she dismissed the reading group, the principal arrived with a supervisor for the school and spent a few minutes talking with the teacher and introducing the supervisor to the students. As soon as the principal left, Ms. Wall sent the class to the bathroom as a group and when they returned, she immediately called another reading group. While they looked at the books, she walked around the room and checked on students' work, reminding one girl who had been procrastinating that she must get her work done or stay after school until it was finished. She returned to the reading group and began going over the words for the next story.

Several minutes after Ms. Wall began the second reading group, one girl put all her seatwork papers into the bin. Ms. Wall kept the second reading group for about twenty minutes, then sent them back to their seats. She immediately called the third reading group, but she still had not included the two new children who had come into her room. She repeated the process of going over new words with the children, then looking at the stories. More students at their seats were beginning to finish their morning work. Some of them began to wander without any apparent purpose. The teacher spent about fifteen minutes with the final group, then began to travel, checking to see how much work the students had done. One girl told Ms. Wall she had nothing to do and the teacher once again went over the things that they might do when their work was finished. She went to her desk while the children were busy with the tasks that she had given them.

It was time for lunch. Ms. Wall told them to put all the finished papers into the bin at the back of the room and to take any unfinished papers along with them to lunch. When the class returned from lunch, Ms. Wall immediately told them to take their seats and get out their math books. She told them the page to turn to, immediately asking two children what page but neither of them knew it. She wrote the concepts they would be studying in math, the zero property and the order property on the board. She explained each of them to the children, writing examples on the board.

About five minutes after the math class began, Ms. Wall told them they were going to do some problems in their books. She read the problem and they answered chorally. Then she switched to individual responses and called on children in the first row. Next, she called the last row in the room, continuing to get individual responses. All of the children were given an opportunity to respond. Ms. Wall then returned to choral responses. When a more difficult problem (three addends, two of them were in parentheses) came up, she stopped the practice and went through an explanation of how to solve this type of problem.

About ten minutes after class began, she had the children turn to the next page and told them that she would show them an easy way to do problems with three addends. Ms. Wall read the problems, first getting choral responses. She checked if everyone was paying attention, telling them they would have to write the problems if they didn't. She then began calling on individual children for several problems. When she got to a more difficult series of problems, she had one student come to the board to solve the problem. Ms. Wall moved on to the next page in the book and asked a child how to find a missing addend. The child answered with the correct numerical answer rather than giving her the explanation. Ms. Wall called their attention to her, and asked a second child to give the answer. She began going over the problems on the third page of the day. Ms. Wall read the problem, the children answered chorally. At this point, she had them moving

at a very quick pace.

About twenty-five minutes after class began, she had them turn to the fourth page they covered in this math class. They had now moved from a review of addition to a review of subtraction. She pointed out that the bulletin board had clue words for subtraction, which they could use when they were solving word problems. She again read the problems and the students responded chorally at a very fast pace. At several points, she said, "If I call on anyone, will you know where I am?"

Half an hour after math class began, she had the children put their maths books away and take out a pencil. She passed out paper, had the children put their name and the date on it, went over an example on the board and then asked a child to read the directions. She went over a second example, reminded them to check their signs carefully and told them to start. They worked for about four minutes before she told them to turn that paper over and passed out a second ditto to them. Ms. Wall again went over an example, and the directions; then she asked them if there were any questions. There were none and she told them they could get started. She passed out the math homework, then began traveling, briefly helped a child and returned to her desk. When the students began finishing about twenty minutes after she gave them the first ditto, she told them to take out their spelling books. She traveled around the classroom briefly and answered questions. About five minutes later she told them to put their math papers away and asked them to take out their language books. At this point, the observer left the classroom for the day.

Ms. Wall accomplished a great deal the second day, moving the students through the review material at a fast pace. Her routines were evident, particularly those that kept the exchange going and attention high. Ms. Wall's math class already had taken on a form similar to the midyear one and her high expectations for performance and efficiency were clear.

Yoda. Ms. Yoda's second day began with the addition of two new students. After taking the roll and sending students to the coatroom, Ms. Yoda explained the morning procedure to the two new boys-- the bellwork had to be completed, students stayed in their seats, except to sharpen pencils, the Pledge of Allegiance would be the first thing each morning.

Ten minutes after school began, Ms. Yoda told the class they would check the bellwork problems. Individual children answered the problems. At the end, Ms. Yoda checked to see how many students had the problems right. Ms. Yoda then checked the completion of spelling and math homework, writing down the names of students who failed to complete either assignment. To check the homework, Ms. Yoda called out the problem and the students answered chorally. When the checking was completed, Ms. Yoda asked the students to pass in their papers, following the procedure she defined the previous day.

Twenty minutes after school began, Ms. Yoda started to set up reading groups. She gave the four children who were working at their seats an assignment and began working with her lower level reading group. Ms. Yoda had the children read aloud so she could hear how they read and then asked for a summary of the first page. The story was about astronauts and Ms. Yoda interrupted the reading to explain several things about space flights to them. After they concluded the story, Ms. Yoda asked several children to spell "astronaut" which was one of the week's spelling words.

Ms. Yoda then explained and demonstrated how to write an outline on the board. She gave directions for the group's seatwork assignment, telling them not to begin until she was finished with the explanation. She asked if there were any questions, then let them begin. While the students worked, Ms. Yoda traveled briefly. The next fifteen minutes she spent intermittantly working at her desk and tutoring.

About an hour and fifteen minutes after school began, Ms. Yoda had the students line up and was reminded by a child's question to announce that the class needed their health books. This was a clear example of the students' needing to remind Ms. Yoda about materials or activities.

When the students returned, Ms. Yoda had them continue working on the tasks she gave

them earlier. When two girls asked to sharpen their pencils, Ms. Yoda permitted it, reminding them to do it before school started. She continued to answer questions, observed but did not interfere with an instance of peer tutoring, and frequently worked at her own desk. A half hour after they returned, a child told Ms. Yoda that he was finished; she told him to get a library book to read. The children continued to either raise their hands or go to Ms. Yoda's desk for help. Forty minutes after they returned from health class, Ms. Yoda had them line up for lunch. Ms. Yoda's second morning was very similar to the way her classroom ran from then on--she taught briefly, gave an extended seatwork assignment and then worked individually with children who had questions or problems.

Math class began after lunch with a review of addition. Ms. Yoda wrote the pages on the board and introduced the zero property concept, using an example. As soon as she got a correct response to zero plus a number, she moved on to the order property, again using examples. Ms. Yoda did not give an explanation of either concept; she simply emphasized the correct answer. She then explained a problem which had three addends, two of which were in parentheses. (This is the same material covered by Ms. Konrad and Ms. Wall, although Ms. Wall's pace and coverage of material is much accelerated.) Less than ten minutes after class began, Ms. Yoda had the students set up their papers and begin working. She told them to write a problem and solve it immediately. She also permitted a child to sharpen his pencil, setting a precedent for pencil sharpening during this time.

Ms. Yoda began to travel and monitor the talking among students. She wrote the day's homework assignment on the board. After about fifteen minutes, she told them to stop, checked how many were finished and began a choral check of the work despite the fact that only three children had finished. She collected the finished papers and told the others to finish at home because all students had to finish.

Ms. Yoda's math class had taken form by the second day--a short lesson followed by practice. She attempted, although somewhat unsuccessfully, to monitor the talking in the class and to keep the pace of seatwork high. She also permitted the students to engage in some avoidance behaviors--sharpening pencils, going to the bathroom and chatting to a neighbor.

Konrad. After the Pledge of Allegiance and school announcements were made over the intercom, Ms. Konrad began her second day by asking the students to clear off their desks and take out their pencils. Ms. Konrad began to distribute paper to each student while students lined up at the pencil sharpener. After they had begun sharpening pencils, Ms. Konrad reminded them twice that pencils were to be sharpened before school announcements began.

Fifteen minutes after school began, Ms. Konrad asked the students to write their names on their papers. She traveled about the room, making sure that they were putting their names on their papers. She modeled the remainder of the paper format by going to the board and showing them how to number the paper. As Ms. Konrad paced dictated spelling words, a student raised his hand to ask if the paper should be in cursive. The teacher responded affirmatively. Ms. Konrad collected the papers individually from each child. Ms. Konrad had the students orally put the spelling words into sentences which she wrote on the board. Ms. Konrad called on individual students for answers, calling on a different student until she got a correct response. She explained that if any student was having trouble with their letters, they should look to the back of the room at the alphabet chart. Ms. Konrad went on to say that when students looked at the chart, she would then know who was having difficulty spelling.

Thirty minutes after the day began, Ms. Konrad distributed paper for the second time and began an second description with a model on the board for paper formatting. The students wrote sentences which Ms. Konrad dictated. While the students wrote, Ms. Konrad went over the need for punctuation and leaving blank lines between sentences. She also traveled and checked, helping several students. As they finished Ms. Konrad told them that they had not done very well on their spelling quiz. She was going to talk to them individually because she expected them to do their homework; in this case, studying spelling words. She then collected the papers with the sentences, again by walking by each child and picking up their paper.

Fifty minutes after the start of the day, Ms. Konrad passed out a ditto. She had the students follow silently while she read aloud. There was a set of questions about the story. She guided them through the first three questions and then had them finish on their own. Ms. Konrad began correcting the papers row by row, explained the grading and reminded the children to take their papers home.

An hour after the start of the day, Ms. Konrad passed out another ditto, which had a poem on it. She asked them to read it themselves. She read the poem aloud, then asked questions about the story. Ms. Konrad had them think about the answer to the last question while she passed out the fifth set of materials, a ditto with questions about the poem She reminded them to put their names at the top and to include the date on their papers. Ms. Konrad explained the directions; then had them begin working. After a few minutes, Ms. Konrad began going over the questions with the class, pointing out where the answers could be found in the poem.

As the class worked, Ms. Konrad began sending children to the bathroom by pairs (two girls, two boys). She monitored the door as children came and went to the bathroom. She collected this set of papers individually again with another reminder to take their papers home.

An hour and a half after school began, Ms. Konrad asked the class to clear their desks and reviewed the work they had covered the previous day in math. She reviewed the terms addends and sum from the previous day, calling on individual students for answers. Ms. Konrad told the class that they should refer to the bulletin board for strategies in remembering math facts. She called on students, developing a general rule for adding zero to a number. She then reviewed the numbers that added to ten. Next Ms. Konrad asked them to take out their math books and pencils quietly. She went over the first examples, calling on students. Ms. Konrad modeled the paper format for the math on the board, reminding them to circle the problem number so that it did not look like it was part of the problem. Ms. Konrad repeated the "wait to start" routine: she passed out paper; they waited. She then showed them another type of paper format on the board. Ms. Konrad reminded them that problems should be written in the same way that they were in the math book. She told them if they needed a second sheet to ask her for it. Ms. Konrad's control over the collection and distribution of materials was unusual and put her in a demanding position because it meant that students did not share or help speed up the task.

Ms. Konrad traveled while the students worked. When a line formed at the pencil sharpener, Ms. Konrad told the students that they should raise their hands to go to the pencil sharpener. During the practice, Ms. Konrad sent a student to the office on an errand (student messenger). Ms. Konrad also kept students on task by looking at them. When a student finished a paper, s/he brought it to Ms. Konrad and she immediately gave the student a task to do. Ms. Konrad again reminded the students to put their names on their papers. When the bell rang, Ms. Konrad told the class to put their math papers inside their books that they would finish them later in the day.

Rivers. Ms. Rivers spent the first ten minutes of the second day with the fifth grade. Opening exercises were followed by roll call; then Ms. Rivers made several brief announcements. At the first bell, the fifth graders left and the fourth grade math class came in.

Ms. Rivers handed out paper to students who didn't have any and then called the first row to the board for a T drill, instructing the students at their seats to practice on paper. Ms. Rivers repeated the drill at the board on the three multiplication table with each of the five rows. After the drill, Ms. Rivers defined her expectations--deadlines were to be met, all students should pay attention and work hard.

Fifteen minutes after the fourth graders entered, Ms. Rivers asked them to open their books, find a page and look at the board. She wrote the lesson topic, place value, on the board and asked for a definition. The student's answer was incomplete so she explained place value and gave an example of how numbers would look without place value to order them. She then went through an elaborate discussion of place value through to the millionths column. Following this, Ms. Rivers introduced her "play dumb" routine by asking the class to explain the concept to her and calling on students until she got the correct answer. At this point the bell signaling the end of class rang and Ms. Rivers dismissed them, telling them she would have their homework papers

corrected by the end of the day.

The fifth graders entered and immediately left again for a bathroom break. When they returned, Ms. Rivers gave them directions for the dictionary work which followed and reviewed breaking words into syllables. The children began working as Ms. Rivers spent a brief time at her desk and then began traveling and checking. Ten minutes after they started working, she announced that she had an additional paper for them when they finished. She began an extended tutorial with one student which lasted six minutes. During this time she did not respond to other student's hands.

About twenty minutes after the practice began, Ms. Rivers gave the class suggestions about what they might do when they finished. When the bell rang again, she asked the last person in each row to collect the papers, had the class stand and stretch and then they get out their math books.

She began the fifth grade math class with a T drill, switching rows quickly and efficiently. A spirit of competition existed among the fifth graders that was lacking in the fourth graders. After each child had a turn, the winners from each group competed and the winner got his or her name on the board with a star.

Ms. Rivers asked them to open their books, got one child's attention and began a fifth grade lesson on place value. She asked for a definition of place value, did not get it and supplied it herself. She put several numbers on the board and called students until each number was read correctly. Ms. Rivers' call until correct routine was more in evidence with the fifth graders than the fourth graders.

A half hour after math began, Ms. Rivers had the class turn to their books. She checked to see if everyone had paper and told them to wait until she explained the terminology introduced in the lesson. This led to an extended lesson and the students did not get to work on their own.

Pace. Day two in Ms. Pace's classes was primarily pre-testing so the structure of the day was somewhat constrained. When Ms. Pace's first group of children entered the classroom, she told them what to do while they waited for the other students to arrive. She repeated the directions to the second group. Ms. Pace gave the first group explicit instructions for their "waiting behavior," but the second group was told to use the first group as a model. Before the rest of the children entered, Ms. Pace called the "eyes to me," and began reciting a poem. When she asked students questions, she seemed to want choral responses, but individuals answered instead. The first graders' understanding of when to answer chorally was limited and they did so only when Ms. Pace gave them explicit instructions.

Ten minutes had passed since the first group entered. Ms. Pace told her class to take out their pencils, get a plain piece of paper and put their names on it. She also told them to wait until she gave them directions. Ms. Pace then distributed the first pre-test, telling the students to put their names on the tests. While Ms. Pace waited for the students to finish putting their names, she pointed to different students asking the class "Who is this?" She told the class it was important to know their friends' name.

Ms. Pace had the children proceed through the pre-test one question at a time. After each question, she told them to look at her so that the students would know what she was saying. When they finished the first section, Ms. Pace told them to quietly stand and go to the reading circle. As Ms. Pace read a story to the students, she had them sit Indian-style. When they talked out of turn, she said, "shhh." They returned to their seats, and Ms. Pace resumed the pre-testing.

Throughout the day, Ms. Pace repeated several cycles of pre-test, other less demanding activities, pre-test, etc. The other activities included an elaborate crayoning and cutting activity. Throughout the day, Ms. Pace requested that the students stop talking and she traveled and checked. When the students had a question, they raised their hands. As students finished the activities, they began the activities designated for "waiting behavior," (such as playing games, getting a book, etc.). During this time, Ms. Pace gave a portion of a pre-test to a student who had

not finished it. Because they were involved in individual activities, Ms. Pace counted for action while she waited for the students to settle before starting another pre-test. Ms. Pace used a new form of collection during the last pre-test of the morning. She asked the students to bring their papers to her as they were completed. The group was dismissed for lunch.

After lunch, the children for Ms. Pace's math group began to enter. Ms. Pace had the lights out and told the children that lights out meant heads down on your desk and no whispering. She put her head down as well (modeling). Ms. Pace continued a quiet time throughout the year, although by the spring, the children were generally working quietly on task, rather than resting.

After quiet time, Ms. Pace began the math pre-test. She reminded the students to put their names on their tests She suggested that they double check their work when they finished. Ms. Pace gave directions for beginning the test, since the students worked independently on this test. Ms. Pace then traveled and checked, answering questions throughout the test. As students began to reach the point where they could not continue, Ms. Pace told them what to do while they waited. Ms. Pace collected the test by walking around the room, dismissing each child to his/her family groups as she collected the test. As they were dismissed, she reminded them to put their belongings away.

Ms. Pace's next group entered (this class was not in a specific subject matter; they were a group of children who were not taking French). The class, which was small, went outside for a nature walk; then came back to draw what they had seen. Ms. Pace discussed what they saw outside, asking questions with individual children responding. She distributed paper and pencils and watched the students draw. When they were finished, the children talked abut what they had drawn. Ms. Pace then had them quietly go with the teacher who came to pick them up. This was the last group of students for Ms. Pace on the second day of school.

Third Day

Patrick. The children entered the room and sat down. Ms. Patrick defined her routine for sharpening pencils and hanging up things in the cloakroom. More specifically, she told the class that she sends one row to do each thing; that way, they were doing two things at a time. She asked the children to tell her what activity came next. Ms. Patrick continued to ask the children to remember the next activity throughout the opening exercises, calling on students until she got the correct answer. The sharing time, a consistent part of the morning in Ms. Patrick's room, was again teacher directed. She reminded the class that the space shuttle had taken off the night before and led them in a discussion. She then asked them if they had anything they wished to talk about. When no one volunteered, she gave them a clue--the baseball team's name. This opened up a discussion by the children. Ms. Patrick had two goals during sharing--to allow the children to talk, often about themselves, but also to discuss topics of current interest in the news. Her direction of sharing time during the first few days reflected these goals.

Half an hour after school began, Ms. Patrick started a review. She handed out a small square of heavy cloth to each child, telling them this was their carpet square. She told the children they were going to sit near her in the front Indian-style. She used an elaborate procedure for getting the children to the front of the room. She called a row at a time, but rather than having the whole row come up at once, she called one child by name. That child came up and sat down where Ms. Patrick indicated. When all the children were sitting in front of her, she reviewed the sounds from the previous day, and had the children put their hands on their heads (hand-raising in Ms. Patrick's room) if they wished to answer. When a child gave the correct answer she shook the child's hand.

After about five minutes of review, Ms. Patrick told the children they were going to have a drill. She held up the sound cards and the children gave choral responses. Ms. Patrick directed the students' return to their seats. As soon as they sat down, she told them to fold their squares nicely (as she demonstrated), put them away in their desks. She also told them that while they had their desks open, they should take out a pencil. Ms. Patrick combined a "put away" and a "take out" in one time span, one of the first instance when she put two or more routines together

in a sequence to increase fluidity and speed. At this point a child who was moved to another class, came in late, causing a small interruption while Ms. Patrick gathered her things together and took her to another class.

An hour after school began, Ms. Patrick told the children they would work in their phonics book. She used a student helper to distribute the pens they needed for proofreading in this book. She gave them elaborate directions for proceeding: before they wrote a word, they said it chorally, wrote it on the desk while she wrote on the board and then they wrote it in the book. Each time they started a new word, Ms. Patrick said, "Eyes to me." As the children worked on writing the words, Ms. Patrick walked around the room and checked the work.

About twenty-five minutes after the lesson began, Ms. Patrick moved them into a different section. First, she read the directions and then the children repeated them. She told them that they were going to spend five minutes on this part of the book; then, they would go to the bathroom and gym. Her timing was off; they were late for gym and the lesson was very short. Ms. Patrick had them put away their books and pencils and line up. The line up was quite sloppy and they had to repeat it before leaving for gym. When they returned to the room, they put their heads down. Ms. Patrick distributed an alphabet sheet. She had them put it away and take out their phonics book. She continued pacing them through the words in the phonics book for about fifteen more minutes.

Ms. Patrick ended her lesson, as she consistently did, by reviewing what they had done in reading and phonics. At this point, one child asked if they could continue sharing their drawings of people in the school. They started this activity at the end of the second day, but had not completed it. Ms. Patrick agreed, allowing a child to provide an idea for how time might be spent. The continued sharing of their pictures continued until lunchtime. The line-up for lunch went much more smoothly than any other and no portion of it had to be repeated.

When they returned after lunch, Ms. Patrick again asked them what came next and continued to call on students until she got the correct answer, math. Ms. Patrick used the felt board again, telling them she was going to use a magic number which was eight. The class worked on finding the pairs of addends that have the sum of eight. They first made sets on the felt board; then Ms. Patrick wrote the problems on the board, pairing the problems (for example, $2 + 6 = 8$ was paired with $6 + 2 = 8$).

After about ten minutes, the children had become fairly noisy and were having trouble sitting quietly, so Ms. Patrick interrupted the lesson and spent some time waiting for the children to settle down. She had them chorally review the problems that she had written on the board. Then Ms. Patrick called out doubles and had the class answer chorally, occasionally asking an individual child to respond.

Approximately twenty minutes after math started, Ms. Patrick had them take out their pencils, reminding them that it was quite noisy. She handed out a paper, asked them to wait, then had them write their names, and finally told them they could start. While they were working, she traveled around the room and checked their work. Ms. Patrick asked the students to check their answers to be sure they were correct.

After the children had been working for about ten minutes, she asked them to put their heads down on their desks when they finished. Several children put their head down almost immediately. Since the teacher with whom Ms. Patrick teams was coming to Ms. Patrick's room to teach English, Ms. Patrick had them pass in their papers.

Ms. Patrick's third grade math class was made up of students from the year before. The first thing Ms. Patrick did was review students' names, checking on children who were no longer in the class. She also introduced herself to the one new boy in the class. Ms. Patrick began handing out a pre-test, reminding the class about the types of problems they had learned the previous year. As they were taking the test, she traveled briefly, then went to the board to write put a problem. As soon as a child was finished and showed Ms. Patrick that the work had been checked, s/he was allowed was allowed to go the board and work the problem. Ms. Patrick continued to add

problems on the board and each child had a chance to solve a problem. As Ms. Patrick put groups of problems on the board, she reviewed the types of problems they had learned the previous year.

After about thirty minutes, after the students handed in the first pre-test, Ms. Patrick gave them another pre-test, this one for speed and accuracy. She asked the children to show her when they were ready to begin. They raised their hands with their pencils in them. When Ms. Patrick asked them if this was Ms. Sand's way to show if they were ready, they responded yes. Ms. Patrick told them that they would use Ms. Sand's technique in math class as well. Ms. Patrick adopted the routine used in the classroom, rather than using the one that was familiar both to her and to her students. She also checked to see if the homeroom teacher had assigned a student helper. Since she had not, Ms. Patrick appointed one for math, and she had the student helper hand out homework.

At this point the third grade math period was over. Ms. Patrick returned to her classroom, took the students to the bathroom, once again with an efficient line-up. When they returned she asked them to take out their carpet squares. This was the beginning of an elaborate distribution in which Ms. Patrick gave them a number, called the number for each of the six things they needed for reading class, and had the students come to her for each thing. This meant six iterations of calling a number and having a student come up to get their material. She told them they were practicing responding to their number so they would remember it in the future. This distribution took more than fifteen minutes.

They used the material she handed out for a reading drill. Ms. Patrick defined the procedures for this particular drill, called a locator drill. They would need their carpet squares and cards. She gave them directions for the drill, demonstrated what she wanted them to do with one child's card and paced them through the locator drill. She gave them a word; they found the beginning, middle and the ending sound individually. When the drill ended, Ms. Patrick had the most carefully defined put-away of the three days. She explained how they were to put a rubber band around the cards, how to fold the carpet square and where to put them in their desks. The whole put-away, with instructions, took about seven minutes. At this point, she had the class stand up and stretch, telling them that they were going to have fun now. One child had asked repeatedly to play a game called Seven Up. Ms. Patrick asked him to tell her how the game was played, listened to the directions and told the children she thought that they could play Seven Up without a great deal of noise. At one point in the middle of the game, When Ms. Patrick redefined the rules, but in general, the game went smoothly.

Within Ms. Patrick's structured and teacher-directed day, she gave the students several opportunities to chose topics for discussion, activities, etc. This was consistent with Ms. Patrick's mid-year class where there was a great deal of student participation in activities.

Wall. By Ms. Wall's third day, the routines were in place and functioning and classes had taken on a structure, as this math class showed. As soon as the children entered the room after lunch, Ms. Wall had them take out their math books. She gave them the page number and then had them look up at the board. Ms. Wall put a difficult problem from the book on the board. She called on students until she got a correct answer. Before she began the second example, Ms. Wall called for everyone's attention.

For the third example, Ms. Wall had a student come to the board and solve a problem while the students at their seats showed her the correct answer on their fingers. She called another student to the board for the fourth example; then had them solve a problem in their heads and answer chorally. For the fifth example she asked them to show her the answer on their fingers. Ms. Wall mixed routines for getting students' answers, keeping interest and attention high.

About ten minutes after math class began, Ms. Wall asked if there were questions. When there were none, she had them turn to the book and begin answering problems. They did the first two chorally and then she began calling on individual children. Ms. Wall caught a child who was not paying attention twice and gave him a number of additional pages of written work. Ms. Wall used this technique of mixing choral and individual exchanges to monitor inattentive students

frequently both in the first few days as well as in midyear.

After five minutes of oral practice, Ms. Wall handed out paper, showed them how to fold it and gave them a written assignment. She then went through an elaborate discussion of how to put the heading on their paper and how to number it. Ms. Wall explained that their name was set apart because they were special. She had them wait before starting the work and then reviewed several problems with the class together before having them begin working independently. She again reminded them that messy papers were ripped.

Ms. Wall again asked if the class had any questions to which they answered, "No 'am." She told them to double check their work and keep the paper since they would check together. Before the students began working, Ms. Wall handed out the homework dittos. She told them they would be tested the next day on basic addition and subtraction.

A half an hour after math class began, the students started working and Ms. Wall traveled around the room, checking work and giving short tutorials. After about ten minutes of work, Ms. Wall told them to put their papers into their math books when they finished, reminding two children who were finished and not busy to find other work to do. Ms. Wall continued to travel and check for an additional ten minutes when she asked them to put their papers into their math books and take out their spelling books. She reminded them to finish their papers before the next day.

During this math class, Ms. Wall used the routines she set up the first two days to keep the pace up, to define what should be happening at a particular time and to support her teaching and their classwork.

Yoda. Ms. Yoda's math class began after lunch. She asked the students to take out their math books and when they did not, she repeated the request. As Ms. Yoda introduced the day's topic, addition with more than two addends, she wrote the page numbers on the board. Ms. Yoda showed the students how the book highlighted the numbers that should be added first; she did not initially explain why adding the highlighted pairs was useful. She went through two examples before explaining that finding two numbers that add up to ten made the problem easier. Ms. Yoda repeated the suggestion for the third example and then gave the students problems to do by themselves. The whole explanation took less that four minutes.

Ms. Yoda called one girl to her desk briefly and then began traveling. She commented indirectly when she heard talking, but did not name the children. Her comment was ineffective. Twelve minutes after the practice began, Ms. Yoda had stopped at each child's desk. She continued traveling, responding to hands raised for help. She went briefly to her desk to check a paper but when children came up for help, she told them she would only help students who were sitting in their seats. As students finished, Ms. Yoda gave them individual instructions about what to do next. The amount of pencil sharpening during this time had increased dramatically from the previous day. The practice was an extended one, about twenty-five minutes, with most children finishing much earlier. About five minutes before the practice was over, Ms. Yoda checked to see who had finished and wrote down the names of those who had not, telling them they had to finish the work at home. She collected the papers of those who had finished, allowing one boy to complete the last problem.

Ms. Yoda's third day math class definitely had the structure it would keep throughout the year. She was not managing the student's work habits or talking as efficiently as she might. Her one technique for encouraging work was to have students who did not finish, complete the work at home.

Konrad. When the bell for math class rang on the third day, Ms. Konrad was sending students to the bathroom in groups of two. This process took nine minutes and when completed, Ms. Konrad asked the class to clear their desks except for a pencil. She then distributed paper individually to each student, telling the class it would be used for scratch paper.

Ms. Konrad went to the board to review addends and sums. She got individual responses when she called on a particular student and choral responses no student was designated. Approximately

fifteen minutes later, Ms. Konrad stopped the review, and launched into a lecture addressed to the girls of the class about the amount of time spent in the bathroom. The lecture over, Ms. Konrad returned to the lesson and started to talk about zero property.

Ms. Konrad told the class the definitional terms would be posted on the bulletin board. As Ms. Konrad reviewed, she alternated calling on individuals and getting choral responses when no particular child was named. When Ms. Konrad asked students to indicate how many remembered a concept from the previous day, they indicated by raising their hands. At one point during the review, Ms. Konrad called on several students who answered incorrectly and she finally supplied the correct answer herself.

Approximately forty-five minutes after the lesson had began, Ms. Konrad asked the students to take out their books. She then had the class to turn to their book and look at several problems. Ms. Konrad explained the procedure for solving the problem then asked if there were any questions. She told the class to begin working, went to her desk, took out the corrected papers from the previous day and called students individually to come to her desk to get their papers. All errors had to be corrected and checked by Ms. Konrad again before they could start the seatwork assignment. Ms. Konrad traveled and reminded students to include the page number in their headings. Ms. Konrad had one child who had solved the problems by multiplying rather than adding sit with her while she corrected his paper. When all but one child had their corrections checked, Ms. Konrad began to travel. As students began to finish their work, Ms. Konrad returned to her desk and the students began to line up to get their work checked. An hour after math began, Ms. Konrad told the students to put their work in the math books; those that had not finished would have time to do so in the afternoon. She told them to put away their books, marking the end of math class on day three.

Rivers. Ms. Rivers began the fourth grade math class by having the last child in the row collect the homework. She asked the helper to tell her if any child did not have their homework and followed the collection with an extended lecture, first on the necessity of having a parent's signature on the homework and second, on the importance of knowing multiplication facts.

She then had the class do the T drill, sending all the children to the board for two sets. When they finished, Ms. Rivers explained the procedure for getting paper, but did not follow with a written exercise. She continued the discussion of place value, using a mixture of choral and individual exchanges. She had the students read the numbers and identify place value. When the bell rang, Ms. Rivers assigned homework to the class and had them line up and leave.

This class was the second one in which Ms. Rivers seemed to be preparing the students for written work, but then decided to extend the presentation for the remaining time. By midyear, she often did have two presentations within one lesson, broken up by a short practice time.

Pace. When the first group of children arrived on the third day, Ms. Pace again reviewed their names. She then asked these children to take out paper and pencils, giving the same instructions to the remaining groups entered. She asked them to put their names on the paper then sit up straight. Ms. Pace's groups of children frequently arrived at different times and she usually began an activity or gave a set of instructions to the first group. The subsequent groups often received truncated instructions from Ms. Pace or checked with the other students to find out what was expected.

Ms. Pace again reviewed the letters of the alphabet, introducing one letter at a time. She had all the students wait until she was ready for them to begin, look at her example on the board and then begin. As they worked, she traveled and checked.

When the practice was finished, Ms. Pace asked the students to take out their papers from the day before and she had them compare their handwriting from the previous day with the work they did on this day. After this, Ms. Pace asked the students to take their papers home with them.

For the next activity, Ms. Pace had the children work on finishing up an art project they began the previous day. She asked the students take out their art project, using, "Shhh"to quiet

them. Ms. Pace explained what they could do if they finished early. She distributed additional paper to each child by walking around the room tearing sheets off the pad, and asked them to put their names on the papers. Ms. Pace gave a thorough explanation of how to use the paste for this activity and what to do when they were finished (i.e., wash hands). They were pasting snake parts together, and before having them begin, Ms. Pace asked them some questions about snakes (where they live, what they look like, etc.). The students worked on this project for a half hour while Ms. Pace tutored individual students at her desk. Ms. Pace constantly reminded the students to whisper, moved a child who was disturbing others and answered the questions of children who came to her.

The class then moved to the reading circle, Ms. Pace recited several poems. Ms. Pace asked the students to identify the long and short vowels. She got a choral response when she asked for it and individual responses when she called on a particular child. Calling out was severly discouraged by Ms. Pace. Interestingly, her directions for choral or individual responses were usually explicitly stated, unlike the other teachers. Before she dismissed the students from the reading group, Ms. Pace gave them directions for what to do when they returned to their seats. After they were seated and had taken out their materials, Ms. Pace directed their attention to her. She asked the children to spell the words in the sentence she had written on the board, getting choral responses. At times, she reminded particular students to pay attention. Ms. Pace modeled on the board what she wanted the students to do which was to write a sentence about a snake following the ideas she provided. She traveled and checked while they wrote their sentences. When the students completed their sentences, Ms. Pace called on individuals to read their story to the class. Before she passed out paper for another project, she told them to take these papers home. The next activity was to draw a picture to go with their story.

About two hours after the children arrived, Ms. Pace had them put away their materials. To speed the transition, Ms. Pace counted for action. In preparation for moving to the reading circle, she had them stand behind their desks. Ms. Pace again read a story to the students, complimented them for sitting Indian-style, and reminded them to raise their hands when they wanted to ask questions. At the beginning of the activity, Ms. Pace moved a student to a desk (not in the reading circle) because she was disturbing others and periodically called on her to check if she was listening. Eventually, Ms. Pace had the student to come and sit next to her.

After the story, the class again went to their desks and Ms. Pace asked them to take out paper and pencil for a spelling test. She reminded them to be quiet and to put their names on the papers. She demonstrated how their paper should be set up, including how to fold the paper and number the lines. She had the class spell the first word chorally, then write the subsequent words on the paper. When they finished, she had them prepare for dismissal, standing behind their desks when they were finished.

After lunch, Ms. Pace's afternoon social studies group entered. She asked them to put their heads down for quiet time (with lights out). After she turned the lights on, she distributed their books and gave them time to look at the pictures. Ms. Pace watched while they looked through the books and then asked them what they had seen,calling on individual students. Ms. Pace had them page through their books until they reached the page she wanted to discuss. She asked them to identify the things that were different about the people in the pictures. She then had them look around the class to see the differences among the children in their class. Ms. Pace called them to the reading group, told them a story until the bell rang, when she then dismissed them.

Ten minutes later, Ms. Pace's children for math class entered. She asked them to sit down behind Cuisenaire rods that she had arranged. When everyone had arrived, Ms. Pace told them to build anything they wished for about ten minutes. Ms. Pace traveled and watched, reminding them to be quiet. After about eight minutes, she had them knock their structures down, sort the blocks by color, then build a stair step, beginning with the smallest rods. As they were working, Ms. Pace checked who was finished, telling them to raise their hands when finished. After about fifteen minutes, Ms. Pace told them to stop, put their blocks away in the containers, and bring them to her. After they brought the containers to her, Ms. Pace sent them to the reading circle where they could talk quietly while they were waiting for dismissal.

Ms. Pace's second group of social studies students entered and sat in the reading circle. She had them look at the book and practice opening and closing it (like her other social studies class), although this group stayed on the floor. She encouraged them to discuss what they saw in the book with another child. After about ten minutes, she had the students move to their desks. Ms. Pace then questioned them about what they saw. She had them look at the page to be discussed, bringing up the differences among people. She also had this group look at the differences and similarities among their classmates, then go to the reading group where she told them the same story--Goldilocks and the Three Bears. They talked about Goldilocks until the bell rang for dismissal. Ms. Pace sent them to their family groups, ending the third day.

Fourth Day

Patrick. On the fourth day, the children came into the room, sat down and Ms. Patrick who was standing at the front, said to a row of children, "Pencils," and to another row of children, "Coats." She had redefined her routine for sharpening pencils and for taking things to the cloakroom. The students were perplexed, although they ultimately went where she told them. She then explained to them that instead of saying sharpen your pencils, she had said pencils, and would continue to do this. She commented that perhaps she had cut her directions too soon and once again explained the shortened directions to the children, telling them that this is how she would direct them from now on.

When they finished, she asked them to tell her what was next in the opening exercises, calling until she got the correct answer. There was an extensive period of sharing which lasted for a half an hour after school began. Following sharing time, she again asked the kids what happens next. She got several incorrect answers but continued calling on children until she got the correct answer, which was reading. Reading began with a short review during which the children chorally responded to the work they had done the previous two days. Ms. Patrick then told them that she had a paper to help them review the lessons they had had. She told them to take it home to work on, asking a student helper to pass out the papers. While this was occurring, she had the class take out their carpet squares. As soon as they received the review sheet, she went over it briefly with them, discovering that some of the children had lost their place. She checked with one child to see where he thought they were, found that he was in the wrong place and told all the children the place where they would begin again.

When they had completed this, she had the children come to sit in the front again. This time her routine was somewhat more streamlined. She simply called rows and had the children come up in their rows, reminding a child who forgot to come when her row was called and sending back students who came before their rows were called. When they were sitting in the front, she introduced new sounds, using individual responses, mixing them with choral responses by same-sex groups and by the whole group. The lesson lasted approximately twenty-five minutes and the return to the seat was in a game form. She pointed to a card and then a child and had the child give the sound. If the child gave the right answer, they could return to their seat; if they did not, they had to remain in the front for a second time.

When the children were all sitting in their seats, the lesson continued. Ms. Patrick had them spell words and sounds with their fingers on their desks for about another fifteen minutes. She then called on individual children to give sentences using the words that they had learned. Approximately an hour and a half after school began, she had the children fold their carpet square, which she demonstrated for them, put it away, line up and leave for the bathroom. When they returned, Ms. Patrick went through a second demonstration of how to head a paper, repeatedly telling them, "Eyes on me." She then wrote the information they needed on the board, giving them very explicit directions for where they should put their names, the date and the heading. This procedure took about ten minutes.

Ms. Patrick had the children begin writing sentences word by word as she explained the need for spacing between words. While the children were working, she traveled and checked. She asked the students to read the sentences they had written chorally. It took approximately ten minutes

to write one sentence and Ms. Patrick realized they had run out of time, so she sent the children to art. They went directly to lunch from art.

As soon as they returned from lunch, she asked, "What's next?" and the children chorally told her math. Ms. Patrick got out the felt board, reviewed the problems they had worked on the previous days, then told them they would be working on a new magic number which was ten. She put the first set on the felt board. As she was doing this, the children got a bit noisy, so she introduced the sign language for quiet. As children began responding correctly, she also introduced the sign for good.

After Ms. Patrick had done two sets on the felt board, she called a student helper to do a set, giving the child the first addend. Ms. Patrick had her make the set, write the number on the board and then asked a child from the class to give the second addend which when added to the first, had to make the sum of ten. The child at the front completed the problem on the felt board and on the blackboard. Ms. Patrick continued this pattern on the feltboard for about ten more minutes. She then moved to working with the problems on the board, showing the children how to reverse the order of the addends in a problem and still have the same answer. She followed this with a choral reading of the problems and their answers.

About fifteen minutes after she began the work on the board, Ms. Patrick had the children get out their math books and open to the back of the book where there was a group of colored squares. She asked them to punch out the squares and passed out zip-loc bags which they would use to hold the squares. She walked around and checked. When one child had finished and put the squares in the bag, Ms. Patrick held it up to show the children what she wanted them to do. As children began to finish, Ms. Patrick began naming the students who were ready and approximately ten minutes after she began working with the squares, she was ready to begin a lesson using the squares from the book.

She had the children make sets with the number of squares that she gave them and also demonstrated on the feltboard. After they had made two sets, they counted them chorally and gave her the answer for the problem. The second time, she put the problem on the feltboard and began to travel and check. As she went around, Ms. Patrick shook the hands of the children who were right. For the third and fourth problems, she simply wrote the numbers on the board, had the students make the set and traveled and checked. This part of the lesson lasted approximately fifteen minutes. Then she had the children put away their squares. While they were doing this, she counted to ten to speed up their put away and to encourage quiet. At this point, the third grade teacher arrived for English and Ms. Patrick went to the third grade room to teach math.

The first thing she did in the third grade room was to return both tests. She praised their work and had them look at the ones they missed. Ms. Patrick told them she was going to keep the tests and asked the student helper from the day before to pick a new helper to collect the papers. Ms. Patrick already had the homework since it had been collected by the third grade teacher. Ms. Patrick passed out the papers, making sure that no one got their own paper. She asked them to take out a crayon for correcting and told them that they would use this homework check as a drill. As she walked around the room, she either called a student's name or tapped their shoulder and the student gave the answer. When they finished the first homework sheet, she had them write the number wrong and put on a good or a smiley face if it was well done. The second homework paper was checked slightly differently. Ms. Patrick read the answers and the children checked them. At the end of this, she asked four girls to return the papers to their owners, calling them mailmen.

This homework check was followed by a repeat of the game drill she had used with the second graders the previous day. She asked the students to stand and told them they could sit when they answered a problem right. They followed directions and she then repeated the game, reversing it--if you were sitting, you stood when you had the right answer. Once again, she reversed it, this time increasing speed so a slowness in response meant that the students had to stay standing rather than sitting down. Each child got a chance until they were able to respond correctly.

Approximately twenty minutes after class began, she handed out paper and had them fold it

into sixteenths, reminding them they had done this the year before. She demonstrated how she wanted it done. At this point, Ms. Patrick began putting problems on the board, one by one, asked the children to copy the problems and solve them. As they solved each problem, she traveled and checked. They were problems reviewing regrouping, which they had worked on the year before. About five minutes before math class was over, Ms. Patrick had them put the paper away and passed out a homework paper from the math series. She began to explain the directions, realized the students were having difficulty understanding how to do it and changed her mind about using this sheet for homework, telling them she would explain it more fully the next day.

Her time period for third grade math was over and she returned to her room, where she dealt with a child that the third grade teacher had moved to the center of the room. She took the children to the bathroom. As they lined up, the girls did quite well, but the boys were fairly chaotic; so she had them sit down and asked them to line up individually as she called their names and arranged them in line in the order she wanted.

When the students returned, she handed back the math papers they had worked on the day before and then had a student helper collect them, telling the children she was going to hang up some of the good ones. She then told them they were going to finish the paper that they used to write sentences that morning. She checked to see that everyone could find the paper. She gave a word and asked the students to make up a sentence. She called on a student for a sentence, wrote it on the blackboard and asked the class to copy it. While they did this, she traveled and checked the work. She repeated this a second time and when they were finished, she told them to take the paper home and asked them to get out their science books.

The science lesson was a discussion of the five senses. She help up pictures where a sense was located, then wrote the name of the sense on the blackboard as they talked about how they might use this particular sense in their classroom. The last activity was a library time. Ms. Patrick had a small library at the back of her room. She asked the students to pick a book and then go to their seats and read it. As soon as most of the students had picked a book, Ms. Patrick chose one, sat down and modeled the way she wanted them to behave during reading. At the end of the library time, she had a student collect all the books and return them to the library. Before the children went home, she handed out math homework with directions. She then sent the children to the cloakroom and finally, when they were sitting in their seats, reviewed the day's activities, and told them when their hands were folded, they would be able to line up and leave.

Wall. Ms. Wall's fourth day math class showed the routines functioning smoothly. No extra time was spent in explaining the procedures that were routinized, although Ms. Wall did provide her students with short reminders.

The class began with a homework check. First Ms. Wall called the roll, asking if the homework was completed. The students answered, "Yes Ma'am." The class exchanged papers, checked the problems and marked the number correct on the sheet. Ms. Wall read the problems and the students responded chorally. Periodically, she asked rhetorically if they knew which number they were on.

As the students returned papers, Ms. Wall traveled and scanned them, praising several students. The homework check was followed by a check of the problems worked during class the previous day. During this time, two boys were sent to the side table to complete the work--one because he had not finished, and the other because his paper was messy and had been thrown away by Ms. Wall. The children checked their own papers this time, answering the problems chorally as Ms. Wall read them. When they finished, Ms. Wall asked who had them all right.

During a brief transition to guided practice, Ms. Wall checked on the two boys at the side table, reminded a student when pencil sharpening was acceptable and told the class to put the heading on their papers. The problems on the ditto were somewhat complex and Ms. Wall went over two examples then continued to have the students work through the problems one at a time, correcting each one. Ms. Wall got a sense of how the students were doing because she traveled and checked after each problem to see how many students had it correct.

By the time the ditto was corrected, math class had been in session for thirty-five minutes. Ms. Wall had the class clear their desks, handed out the test and gave instructions about where to put the completed tests. She returned to her desk, monitoring students by looks or verbal reminders. Students began finishing after about five minutes and Ms. Wall told them to study their spelling words for the test later in the day.

By the fourth day, Ms. Wall's math class had taken on the structure that could be found in midyear. The students had become familiar enough with her routines so that Ms. Wall's cues were limited and short.

Yoda. Ms. Yoda had written five problems on the board before the students returned from lunch. As soon as they entered, Ms. Yoda asked them to take out their math books and plain paper. The students were slow and Ms. Yoda waited, reminding them to find the correct pages and again waited. She worked through the five examples on the board, calling on students until she got a correct response. She answered questions about problem set-up and which problems to do. Then she had the class start.

Ms. Yoda began traveling around the room until one child again asked which problems they were to do. She wrote the problem numbers on the board and told them that usually they do two pages in math each day. Ms. Yoda continued to adhere to her intention of covering two pages in the math book each day, making math class quite predictable.

When one girl asked if unfinished problems had to be finished at home, Ms. Yoda said it depended on how many were unfinished. She began to travel, checking papers and reminding children to work and not to talk. After about a half hour, Ms. Yoda had the students pass in their papers, commenting that she would check them and decide if the papers had to be finished for homework. As she was checking, she would keep in mind whether or not they were working hard or not. This was a relaxing of the rule that all papers had to be finished during the practice time.

Ms. Yoda allowed lengthy practice periods in her math class during which the students' on-task behavior varied. Her expectation that unfinished work was homework was looser on day four than the previous days and seemed to be less important by midyear. It is important to note, however, that in midyear, the completion rate was fairly high.

Konrad. Day four of math class began with Ms. Konrad telling the students to take out their math books and homework. She reminded them to put their name on the papers and then collected their homework. Ms. Konrad asked the class to close their math books, repeating her direction. She began another review of addends and sums, emphasizing doubles. She called on individual students to answer. Ms. Konrad suddenly stopped the class and reprimanded a student (the same student from the day before), then returned to the lesson immediately. Fifteen minutes after math began, Ms. Konrad asked the students to find pages six and seven in the math book. She explained the examples and directions and began distributing paper, reminding the class about how to set up their paper While Ms. Konrad was at the door talking with another techer, one of the students went to the pencil sharpener. When Ms. Konrad was finished talking with the other teacher, she told the student at the pencil sharpener to sit down, reminding her that she must raise her hand to go to the pencil sharpener. The student was angry and slammed her desk. Ms. Konrad reopened it, took out her math materials and told the student that her behavior was unacceptable. However, this particular student's behavior continued to disrupt the class.

Ms. Konrad reminded them to be careful about writing their problems, then told them to begin the set of problems assigned. During this seatwork, Ms Konrad moved two students, who were not working. Children raised their hands if they needed help and Ms. Konrad went to their desk. The student who Ms. Konrad earlier reprimanded for going to the pencil sharpener, raised her hand and received permission to sharpen her pencil.

Forty minutes after math began, Ms. Konrad asked the students to put their papers inside their books, telling them they could finish the work in the afternoon. When the bell rang, Ms. Konrad had the students line up, girl first, then boys, to go to their art class.

Rivers. The fourth day began with a homework collection following the pattern she set up--last person in the row collect the paper and give them to her. She told the students to get out their math books and immediately followed with an instruction that they would use the paper she was handing out for both the warm-up and the lesson.

A group of students did the T drill on the board while the ones at their seats used the paper they received. The groups were switched for a second set of two T drills. As soon as the drill ended, Ms. Rivers drew a number line on the board with numbers from 10 to 90 above the line and 110 to 190 below it. She told them the lesson would be on rounding to the nearest ten and gave them a rule for rounding. Ms. Rivers then wrote examples on the board and had a student round the numbers to the closest ten. After three examples, she asked a student to come to the board, give the answer and then show the class on the number line. About five minutes after the presentation began, Ms. Rivers introduced "signal digit," explained its importance and had the students circle the signal digit when they came to the board.

Ms. Rivers had the class look at the worksheet she gave them. They went through the first five problems together, then she had them finish the paper. Ms. Rivers gave them instructions and the students began working as she traveled. Almost immediately, she began having an individual explain the first of the four problems they were doing, despite the fact that many students had not finished.

Ms. Rivers checked if anyone had questions and gave them a homework assignment in their math books. They began working again briefly before the bell rang and Ms. Rivers dismissed them, reminding them to fold their papers.

Pace. Ms. Pace's students entered and she began the fourth day by reciting poems, encouraging the children to join in. Just like previous days, Ms. Pace reviewed the children's names by asking the class who every child was; they answered chorally. Fifteen minutes after the day began, Ms. Pace told the class to take a piece of lined paper and put their names on it. The guided practice on writing the letters of the alphabet began with two routines to ensure student attention. Students were told to sit tall with their feet flat on the floor; Ms. Pace then said, "eyes front." Ms. Pace put the letters on the board one at a time. She traveled to check that all the children had each letter right before she moved on to a new letter. As Ms. Pace traveled around the room, she praised their work.

Approximately forty minutes after the day had begun, Ms. Pace told the students to put their materials away. She had written the seatwork assignment on the board and reviewed each of the five parts orally with the class. She called one group of students to the reading circle and instructed the remainder of the class to work on the assignment she put on the board. During the reading group, Ms. Pace asked students to read out loud one at a time. She sent a child who was inattentive back to her seat. After Ms. Pace sent the small group back to their seats, she then asked the entire class to stand, and had the class move to the reading circle, where she reviewed vowel sounds. She called on individuals by either pointing to students or calling their names, then requested choral responses by saying "Everyone." Ms. Pace moved a disruptive child by relocating him in the circle.

Ms. Pace reminded the class to sit Indian-style quietly. When the shared presentation ended, Ms. Pace sent most of the class back to their desks, reminding them to begin the seatwork assignment. She had the children in her second reading group stay in the circle. While she was working with the second group, a child came to her with a question and was told not to interrupt. When Ms. Pace sent the reading group back to their seats, she told the entire class to put everything away except paper and pencil. She asked the students who had finished their assignment to put their names on the papers and bring them to her.

Before she had the class begin the spelling lesson, Ms. Pace gave a detailed explanation of how the paper was to be formatted and traveled to check that the students had done it properly. Ms. Pace gave them one spelling word at a time, had the students write the word and checked the spelling of each one orally before going on. Sometimes the class chorally responded by reciting each letter and at other times, she called on individuals to spell the word. When the spelling

paper was completed, Ms. Pace asked them to read all the words together.

Ms. Pace had the children move to the reading circle for a story, reminding them that their hands should be in their laps. After the story, Ms. Pace called the third reading group, told the rest of the students to finish their seatwork first and then do any of the activities acceptable during "free time." The students began working quietly. After twenty minutes, Ms. Pace dismissed her reading group and told the students to return to their family groups. As the children got ready to return to their family groups, she told them to take their papers home. All of the students left except one girl who had to stay behind to finish her work.

After lunch, Ms. Pace entered with the afternoon social studies class. They sat in their seats and put their heads down. Ms. Pace took roll. During the quiet time, Ms. Pace moved a child who was noisy. After quiet time ended, Ms. Pace distributed paper and pencils to each child. She told them to sit up straight and put their feet under their desks, her preparation for a writing exercise.

Ms. Pace had the students write "This is me" on their papers.To do this, she wrote the sentence on the board; then dictated it letter by letter for them to write while she traveled and checked. While she passed out construction paper, she had the children write their names on the paper. She showed the children how to fold the construction paper and helped several children fold it to make a booklet. Ms. Pace asked them to draw a picture on the construction paper cover. When the period ended, she told them to put their crayons away, counting to ten to encourage speed. She collected their booklets as they left.

The next class was math. As they entered, Ms. Pace told the children to sit quietly on the floor in the reading circle. She called roll and they raised their hands in response. She began the class with a drill, calling out a number and having the students show her the number by holding up the correct number of fingers. She then wrote a number on the board and had the children trace it with their fingers on the floor. For each new number, she called "eyes to me."

Ms. Pace next spent time reviewing the children's names (this group had some new children). As she did this, she individually assigned the children a seat for math class, reminding them that the desks were not their own so they should keep their hands on top of the desks.

Ms. Pace passed out paper and pencils to each student and told them to put their names on the paper and wait quietly. She wrote one number at a time on the board and asked the students to write them on the paper. Before she wrote each number, she said, "eyes to the front." The last activity was to draw eight flowers. Ms. Pace traveled and then told the class to bring their completed papers to her. As the students brought their papers to her, Ms. Pace sent them to their family groups.

The last class of the day was another social studies group. Ms. Pace repeated the lesson she used with the social studies first class, with virtually no variations until the children began completing their seatwork. She then reviewed childrens' names individually as she traveled around the room (this group was made up of different children than her reading and math groups). As students finished, she sent them to various activities to wait until the rest finished. Ms. Pace ended the class with a continuation of a story, having called all the children to the reading circle. When the bell rang, Ms. Pace sent the students back to their family groups for the end of the day dismissal.

Ms. Pace's days differ from the other teachers because she is responsible for many different groups of children. Since she does not have a group of children for a homeroom, her routines (with the exception of entering and exiting) are used to enhance instruction. However, the age of her students means that Ms. Pace uses a lot of management routines to teach the children the behaviors necessary for moving from a kindergarten to a primary experience. She also uses fewer different exchange routines, although she uses them with great frequency.